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ABSTRACT

Selected members of the Rural Education Special Interest Group (RE/SIG) of the American Educational Research Association participated in a modified Delphi study to examine the agenda for rural educational research proposed by the Federal Interagency Committee on Education (FICE) Subcommittee on Rural Education. The Delphi technique is a procedure designed to secure opinions and judgments of experts in specialized fields and to seek consensus as to the most likely scenarios. The 28 participants validated the contents of the original 1991 FICE agenda topics and research and development areas. Through two rounds of consensus building, the participants agreed with the content of the original FICE agenda's six major topics. In addition, they agreed with the content of 31 of the 44 original FICE agenda research and development areas within each of the 6 topics. They suggested 23 new research and development areas, across the 6 major topics, during the first round of the study. In Round Two, the members validated the contents c these new areas and agreed on 16 of them for inclusion in Round Three. During Round Three, participants prioritized the six major topics and developed a research and development budget. The topics, in order of priority, are the following: (1) overall school effectiveness; (2) school-community partnerships; (3) human resources; (4) finance and governance issues; (5) use of technology; and (6) curriculum provisions. Appendices contain introductory letters and instruments for the three rounds and commentary papers by RE/SIG members. (KS)

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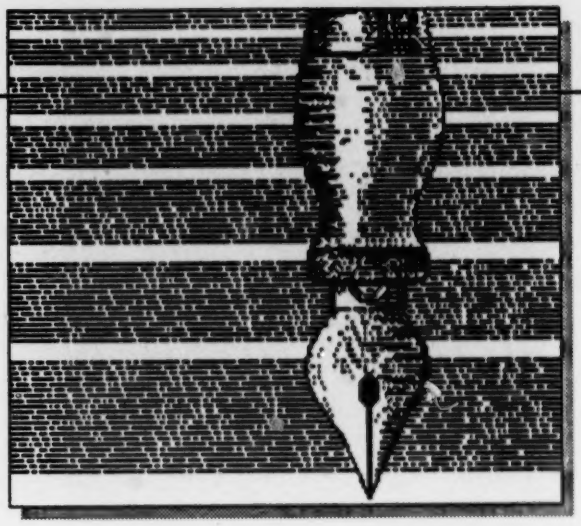

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Priorities for Research and Development With Rural, Small Schools: Results of a Modified Delphi Study With a Panel of Rural Researchers

Kimberly Hambrick
John R. Sanders
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U.S. DEPARTMENT OF EDUCATION
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April 1994

The Appalachia Educational Laboratory (AEL), Inc., works with educators in ongoing R & D-based efforts to improve education and educational opportunity. AEL serves as the Regional Educational Laboratory for Kentucky, Tennessee, Virginia, and West Virginia and operates the Eisenhower Regional Math/Science Consortium for these same four states. It also operates the ERIC Clearinghouse on Rural Education and Small Schools.

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Bruce Barker, College of Education, Western Illinois University, Macomb, IL (currently with Department of Media and Educational Technology)

Robert Carlson, College of Education, University of Vermont, Burlington, VT

William Carlson, Cornell University, Ithaca, NY

E. W. Chance, Department of Educational Leadership, University of Oklahoma, Norman, OK

Ronald Davison, College of Education, Georgia Southern University, Statesboro, GA

Alan DeYoung, College of Education, University of Kentucky, Lexington, KY

Stanley Easton, Department of Educational Resources, Jacksonville State University, Jacksonville, AL

Louise Fulton, School of Education, California State University at San Bernardino, San Bernardino, CA

Toni Haas, Mid-Continent Regional Educational Laboratory, Aurora, CO (currently with Toni Haas Consulting)

Dwight Hare, Department of Curriculum and Instruction, Mississippi State University, Mississippi State, MS

Hobart Harmon, Executive Assistant to the State Superintendent of Schools, West Virginina Department of Education (currently director of the Rural, Small Schools program at AEL)

Vernae Hasbargen, Minnesota Rural Education Association, Fergus Falls, MN

Doris Helge, National Rural Development Institute, College of Education, Western Washington University, Bellingham, WA (currently a private consultant)

Jerry Horn, College of Education, East Texas State University, Commerce, TX

Kathy Lewis, Alvin C. York Institute, Jamestown, TN

Jack Lyday, Center for Community Education, College of Education, University of South Carolina, Columbia, SC

William Matthes, Office of Rural Education Policy and Planning, University of Iowa, Iowa City, IA

Walter McIntire, College of Education, University of Maine, Orono, ME

Claudette Morton, Rural Education Center, Western Montana College, Dillon, MT

Ivan Muse, Brigham Young University, Provo, UT

Robert Newhouse, College of Education, Kansas State University, Manhattan, KS

Joe Newlin, Office of Rural Education, Colorado State University, Fort Collins, CO

William Peter, Missouri Schools Service Center, Central Missouri State University, Warrensburg, MO

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Paul Theobald, Department of Education, Texas A&M University, College Station, TX (currently with Department of Teacher Education, South Dakota State University)

Second, the authors would also like to acknowledge the 14 educational researchers who assisted in reviewing the draft document of this paper. These professionals provided feedback to the authors of the paper in various ways. Most provided insights and suggestions, either written or oral, on how to strengthen the paper. The authors considered carefully their suggestions and incorporated many of them into the final report. Some offered ideas about possible next steps in this research process. These ideas focused mainly on continuing communications and examining the priority topics and research and development areas more in depth for potential projects or studies. Others decided to write commentaries suggesting modifications and uses of the menu for rural educational research. These commentaries appear as Appendix D, to the study. The authors greatly appreciate the expertise and insight the following individuals contributed to this study.

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Gary Huang, Results Branch, Maryland State Department of Education, Baltimore, MD

Mary Hughes, West Virginia Education Fund, Charleston, WV

Stephen Jacobson, University of Buffalo, Buffalo, NY

Deborah Jolly, Southwest Educational Development Laboratory, Austin, TX

Ken McKinley, Education Research, Oklahoma State University, Stillwater, OK

Gail Meister, Research for Better Schools, Philadelphia, PA

Sue Raftery, Cooperative Extension Service, Auburn University, Auburn, AL

Richard Tompkins, Southwest Educational Development Laboratory, Austin, TX

EXECUTIVE SUMMARY

In 1989, the Federal Interagency Committee on Education (FICE) Subcommittee on Rural Education examined the state of rural education research, drawing upon the knowledge of specialists inside and outside the federal government. This examination led to the release of *An Agenda for Research and Development on Rural Education* (hereafter, referred to as the Agenda) in 1991 (United States Department of Education[ED], 1991). The Agenda presented six major research topics (school effectiveness, curriculum provisions, school-community partnerships, human resources, use of technology, and finance and governance issues) and several areas for research and development under each topic.

In 1991, during the business meeting of the Rural Education Special Interest Group (RE/SIG) of the American Educational Research Association (AERA), members discussed the Agenda and its utility. It became apparent through this discussion that the Agenda was not being accorded much attention in professional research publications or association meetings. Likewise, there seemed to be little evidence that any of the FICE Agenda topics were being researched systematically.

The RE/SIG members present at the business meeting decided to focus on the Agenda as a mechanism for facilitating members' communication throughout the year. They surmised that the Agenda could provide the group with an opportunity to involve themselves in activities that would produce reflective commentary that could validate, update, and extend the contents of the original Agenda developed by the FICE and the ED.

In response to the members' resolve, an RE/SIG official and some of his colleagues at the Appalachia Educational Laboratory designed this modified Delphi study and conducted it over a 10-month period in 1992 with selected members of the group. (The collection of data was conducted from February 1992-November 1992; however, data analysis and report writing occurred in 1993-94.)

The authors conducted this modified Delphi study with selected members of the RE/SIG of AERA. The primary purpose was to examine the FICE's Subcommittee Agenda for rural educational research.

Secondary purposes of this study were to develop a menu of researchable issues for rural educational researchers; and to draw upon the knowledge of selected RE/SIG members to prioritize the major topics of the Agenda, and to allocate a hypothetical budget across the major topics.

The Delphi technique is a procedure designed to secure opinions and judgements of experts in specialized fields and to seek consensus as to the most likely scenarios. The authors decided to use this procedure to gather data for this report; however, only two of the three rounds could be classified as "Delphi rounds." The third round was more like a traditional marketing survey. Based on this study configuration, the authors refer to this method as a modified Delphi process.

Based on the findings, the authors drew the following conclusions.

Implications for Future Rural Educational Research and Development

Certain implications for future rural educational research and development can be derived from this study. These implications are as follows:

- The RE/SIG members who participated in this study validated the contents of the original 1991 FICE Agenda topics and research and development areas. Through two rounds of consensus building, the participants agreed with the content of the original FICE Agenda's six major topics. In addition, they agreed with the content of 31 of the 44 (70%) original FICE Agenda research and development areas within each of the six topics.

- The RE/SIG members expanded the contents of the original 1991 FICE Agenda research and development areas. They suggested 23 new research and development areas, across the six major topics, during the first round of this study. In Round Two, the members validated the contents of these new areas and agreed on 16 of them for inclusion in Round Three. Therefore, they expanded the original FICE Agenda by 16 research and development areas.

- This research effort produced an updated menu of researchable issues available for immediate use by rural educational researchers. Building upon the earlier efforts of the FICE Subcommittee on Rural Education, the RE/SIG members added their knowledge and insights and adapted the original 1991 Agenda to reflect changes in the conditions of rural educational research. The Rural Education Research and Development Menu should continue to facilitate a dialogue on the problems and contributions of rural education, encourage research and development on rural concerns, and promote coordination and collaboration among educational researchers.

- In addition to an updated agenda, this research effort provided a first attempt at prioritizing the six major topics and their research and development areas. This priority ranking, along with the hypothetical budget allocations, may assist rural educational researchers with decisions concerning their research and development resources.

CHAPTER ONE: INTRODUCTION

In 1989, the Federal Interagency Committee on Education (FICE) Subcommittee on Rural Education examined the state of rural education research, drawing upon the knowledge of specialists inside and outside the federal government. This examination led to the release of *An Agenda for Research and Development on Rural Education* (hereafter, referred to as the Agenda) in 1991 (United States Department of Education [ED], 1991). The Agenda presented six major research topics (school effectiveness, curriculum provisions, school-community partnerships, human resources, use of technology, and finance and governance issues) and several areas for research and development under each topic.

In the Agenda, the FICE "recognized a need to better examine the state of rural education" and "attempted to identify and articulate some of the [related] research issues" (ED, 1991).

Further, the FICE sought to:

- open a channel for dialogue on problems and contributions of rural education;
- encourage the focus of research and development resources on rural concerns; and
- promote coordination and collaboration among researchers.

The FICE Subcommittee and the ED invited educational researchers to use the Agenda to formulate research studies and to share their findings with them. In addition, the authors of the Agenda asked the profession to submit comments about ways to adapt the Agenda to the changing conditions in rural settings.

In 1991, during the business meeting of the Rural Education Special Interest Group (RE/SIG) of the American Educational Research Association (AERA), members discussed the Agenda and its utility. It became apparent through this discussion that the Agenda was not being accorded much attention in professional research publications or association meetings. Likewise, there seemed to be little evidence that any of the FICE Agenda topics were being researched systematically.

The RE/SIG members present at the business meeting decided to focus on the Agenda as a mechanism for facilitating members' communication throughout the year. They surmised that the Agenda could provide the group with an opportunity to involve themselves in activities that would produce reflective commentary that could validate, update, and extend the contents of the original Agenda developed by the FICE and the ED.

In response to the members' resolve, an RE/SIG official and some of his colleagues at the Appalachia Educational Laboratory designed this modified Delphi study and conducted it over a 10-month period in 1992 with selected members of the group. (The collection of data was conducted from February 1992-November 1992; however, data analysis and report writing occurred in 1993-94.)

Purpose

The authors conducted this modified Delphi study with selected members of the RE/SIG of AERA. The primary purpose of this study was to examine the FICE's Subcommittee Agenda for rural educational research.

Secondary purposes of this study were to develop a menu of researchable issues for rural educational researchers; and to draw upon the knowledge of selected RE/SIG members to prioritize the major topics of the Agenda, and to allocate a hypothetical budget across the major topics.

Objectives

The following seven objectives guided the work of this modified Delphi study:

1. To expand opportunities for RE/SIG members to interact about research issues.

2. To validate, update, and expand the FICE Agenda by having RE/SIG members evaluate their level of agreement with the recommended FICE six major topics and related areas for research and development.

3. To produce a menu of researchable issues for rural educational researchers.

4. To prioritize the major topics and reflect the view's of selected RE/SIG members in terms of urgency with which the major topics need to be addressed.

5. To allocate a hypothetical research and development center budget of $5,000,000 among the major topics.

6. To produce a document that communicates to educators and policymakers, especially those with strong rural interests, the research menu, priority list, and hypothetical budget allocation derived from selected RE/SIG members.

7. To keep the selected RE/SIG members involved in all three rounds of the study.

Audience for this Report

Researchers and policymakers, especially those interested in rural education issues, constitute the primary audience for AEL Occasional Paper 35, *Priorities for Research and Development With Rural, Small Schools: Results of a Modified Delphi Study With a Panel of Rural Researchers.* Secondary audiences include education practitioners working in rural areas; teacher education institutions that prepare educators to work in rural communities; rural citizens and others working on community and economic development projects; foundations and other philanthropic organizations that sponsor projects in rural communities; and researchers interested in applications of the Delphi technique.

CHAPTER TWO: PROCEDURES USED

The Delphi technique is a procedure designed to secure opinions and judgments of experts in specialized fields and to seek consensus as to the most likely scenarios. The authors decided to use this procedure to gather data for this report; however, only two of the three rounds could be classified as "Delphi rounds." The third round was more like a traditional marketing survey. Based on this study configuration, the authors refer to this method as a modified Delphi process.

The overall study process is summarized in Figure 1. The data for this modified Delphi study were collected over a 10-month period in 1992. Data analysis and report writing occurred in 1993-94.

Selection of Participants for Modified Delphi Study

As indicated above, one of the objectives of this modified Delphi study was to expand opportunities for RE/SIG members to interact about research issues. Therefore, participants for this study included members of the RE/SIG only.

The authors agreed on a purposeful sample of participants from the RE/SIG membership list. The reason for a purposeful sample instead of a random sample was that the authors wanted the group to be balanced in terms of geography and gender.

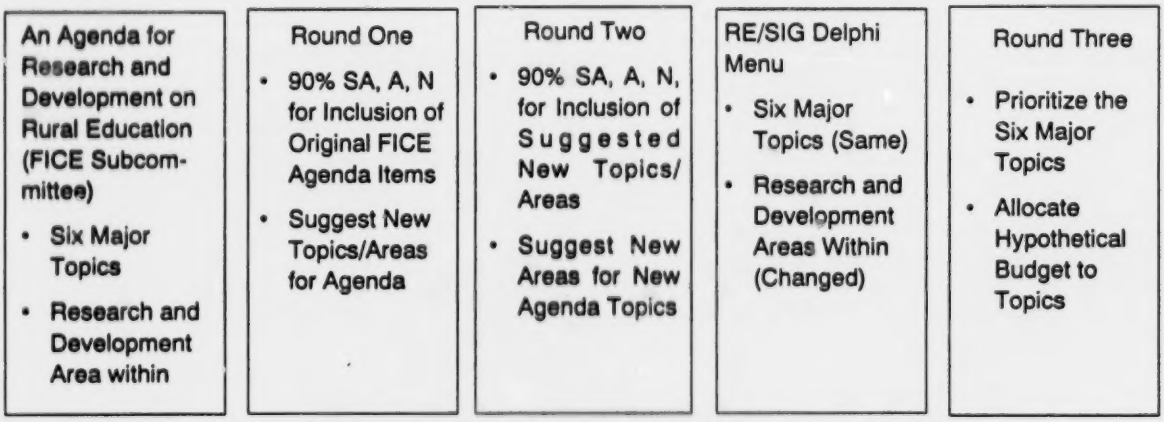
An Agenda for Research and Development on Rural Education (FICE Subcommittee)
• Six Major Topics
• Research and Development Area within
Round One
• 90% SA, A, N for Inclusion of Original FICE Agenda Items
• Suggest New Topics/Areas for Agenda
Round Two
• 90% SA, A, N, for Inclusion of Suggested New Topics/Areas
• Suggest New Areas for New Agenda Topics
RE/SIG Delphi Menu
• Six Major Topics (Same)
• Research and Development Areas Within (Changed)
Round Three
• Prioritize the Six Major Topics
• Allocate Hypothetical Budget to Topics
—1989—
—February 1992—
—May 1992—
—November 1992—

Figure 1
Overview of Modified Delphi Study Process

Therefore, 20 females and 20 males from different geographical regions of the United States were invited to participate in this modified Delphi study. The authors telephoned each of the 40 RE/SIG members, explained the focus of the study, and asked them if they would like to participate in the modified Delphi study. Thirty of the 40 (75%) RE/SIG members agreed to participate in the study. (The reader should note that although 30 members agreed to participate in the study, one of these 30 members did not respond to a followup mailing and was eliminated from the study. Therefore, the sample size for all three rounds of the modified Delphi study was 29.)

Of the 29 RE/SIG members who agreed to participate in the study, 19 (66%) were male and 10 (34%) were female. In terms of geographical location, one participant was from each of the following areas: Alabama; California; Washington, DC; Georgia; Illinois; Iowa; Maine; Maryland; Minnesota; Mississippi; Missouri; Montana; New York; Oklahoma; South Carolina; Utah; Vermont; Washington; and West Virginia. Two participants were from each of the following areas: Colorado, Kansas, Kentucky, Tennessee, and Texas.

Participants were asked to provide the authors with information concerning their professional role and their place of employment. All but one provided information about their respective roles. Fifteen were higher education professors, seven were higher education administrators, three were researchers, two listed "other" as their role, and one was a staff member of a state education agency.

In terms of place of employment, all provided this information. Of the 29 participants, 24 were employed at institutes of higher education; two were employed at educational associations; and one each was employed at state education agencies, a Lab/Center, or the Department of Education.

Round One

Items on the first round of the modified Delphi study included the six major topics (The Effectiveness of Rural Schools, Curricular Provisions in Rural Schools, School and Community Partnerships, Human Resources for Rural Schools, Use of Technology in Rural Schools, and Financial Support and Governance for Rural Schools) and the associated research and development areas developed by the FICE Subcommittee on Rural Education. (See Appendix A, Round One Instrument Documentation.) The authors pilot tested the Round One instrument with members of AEL's Rural Coordinating Unit during January 1992. Minor changes in directions to respondents were made to the documentation and a revised copy was mailed in February 1992 to the study participants.

In Round One, the participants completed three tasks. First, the participants examined the Agenda, developed by the FICE Subcommittee, and indicated the degree to which they believed that each research and development area was a priority. Participants used the following five-point scale: Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree.

Second, the participants suggested other research and development areas for the six research and development agenda topics. The authors encouraged the participants to think creatively about other possible areas for research and development. Third, participants in Round One nominated additional topics, other than the six extant ones, for consideration in subsequent rounds of this study.

Once all instruments were returned, the authors completed two steps. Items from the first task were retained in the study if 90 percent[1] of the respondents Strongly Agreed, Agreed, or were Neutral with/toward the items. These items were filed until the completion of Round Two. Next, research

[1]The 90 percent criterion was agreed upon by the authors before the study began. The high agreement criterion was based on the objective to validate, update, and expand the FICE Subcommittee Agenda.

and development areas generated for existing FICE Agenda topics, and the nominated additional topics, were aggregated into the instrumentation for Round Two.

Round Two

The second round of the modified Delphi study focused on both the extant areas for research and development under the FICE Subcommittee Agenda topics and on the newly suggested topic and areas for research and development that participants provided as write-ins during Round One. (See Appendix B, Round Two Instrument Documentation.) The authors mailed Round Two of the study to participants in May 1992. Participants returned their completed instruments by June 1992.

Participants completed two tasks in Round Two. First, participants reviewed the RE/SIG-generated areas of research and development, for original FICE Agenda topics, and indicated the degree to which they felt each area presented was a priority. The same five-point scale used in Round One was used in Round Two.

Second, participants examined the newly suggested topic, "Unique Aspects of Rural Communities," and indicated the degree to which they felt this topic was a priority. Participants were instructed that if they Strongly Agreed, Agreed, or were Neutral with/toward this new topic, they should nominate associated areas of research and development for consideration in subsequent rounds of the modified Delphi study.

Following receipt of the completed instruments, the authors retained items from the first task if 90 percent of the respondents Strongly Agreed, Agreed, or were Neutral with/toward the item. In terms of the second task, the topic was retained if 90-percent of the respondents Strongly Agreed, Agreed, or were Neutral with/toward the item. (The topic did not meet the 90 percent criterion. If the topic had been retained, the suggested areas for research and development would have been aggregated into a Round Three instrument and mailed to participants.)

Round Three

The third round of the modified Delphi study focused on the major topics and suggested areas of research and development retained from Rounds One and Two. In this round, participants examined the six major topics and their corresponding areas for research and development and completed two parts (Part A and Part B) for Round Three. The two parts for Round Three differed somewhat from the Delphi methodology of gaining consensus, implemented in Rounds One and Two. In the third round, participants prioritized the six major topics and allocated a hypothetical budget. Because of the uniqueness of these two parts, the authors pilot tested the instruments with the members of AEL's Rural Coordinating Unit. Results from the pilot test led to changes in the instrumentation. These changes were incorporated into the final instruments before they were mailed to participants. (See Appendix C, Round Three Instrument Documentation.)

Part A. The authors mailed Part A of Round Three in early November 1992. The participants ranked the six major topics (school effectiveness, curriculum provisions, school-community partnerships, human resource, use of technology, and finance and governance issues) to reflect the order of priority for each research topic. Participants ranked these topics from 1 to 6, with 1 being the highest priority and 6 being the lowest. Completed instruments were returned by mid-November 1992.

Once all completed instruments were received, the authors converted the ranks to point values for each major topic. Before the point values were calculated, the authors reversed the scale so that 1 equaled the lowest ranking and 6 equaled the highest ranking. Based on this reversal, the total point values to allocate for all six major topics equaled 609 points. (The total point value was calculated by assigning each ranking a point value: six points for ranking 1; five points for ranking 2; four points for ranking 3; three points for ranking 4; two points for ranking 5; and one point for ranking 6. Each topic had the potential to be ranked by 29 participants.

Therefore, the point values were multiplied by 29 to receive the total point value.) After the authors calculated the point value for each major topic, the overall final rank order was established.

Part B. The authors mailed participants Part B of Round Three in late November 1992. Participants allocated a hypothetical research and development budget to address the six major topics and their associated areas for research and development. Their completed budget allocations were due to the authors in early December 1992.

Part B focused on the final task for participants to complete. The instrumentation for Part B included a response card and 10 blue stick-on dots. The participants were to assume the role of a director of a newly formed national R & D center for rural educational research and development. In this role, they would have a $5,000,000[2] budget to allocate for rural educational research and development.

Participants were instructed to think of each blue dot as 10 percent—$500,000—of their research and development budget and to allocate this budget across the six major topics (school effectiveness, curriculum provisions, school-community partnerships, human resources, use of technology, and finance and governance issues). Participants were instructed that the dot amount could not be broken down into smaller amounts. Participants had the option of using all 10 dots or some combination of dots across the topics. Dots did not have to be allocated for each topic. Participants also had the option of allocating money toward "other" research topics.

Data Analysis

Findings for Rounds One and Two described frequencies of agreement with the importance of rural education research and development topics. Findings for Round Three described the rank order of topics and theoretical budget allocations. A post hoc analysis of Round Three results was also conducted to explore possible relationships that might exist between the rank priorities and dot allocations assigned to each topic.

These relationships were explored by computing Spearman rank order correlations between priority rankings and dot allocation rankings for each research and development topic used in the study, not just those retained after Rounds One and Two. Next, the authors conducted a post hoc analysis of Round One ratings, Round Two ratings, and Round Three rankings to explore possible predictive relationships between importance ratings of topics from Rounds One and Two and priority rankings from Round Three, again using all the data generated in Rounds One, Two, and Three. Stepwise regression analysis was applied to the Round One and Round Two rating agreement scores (independent variables) and the Round Three (dependent variable) topic importance scores (rankings and budget allocations) to describe possible linear associations between the ratings in each round of the modified Delphi study.

Since the authors were conducting an entirely empirical post hoc analysis of the rating data collected in the modified Delphi study, no attempt was made to test hypotheses or to interpret the statistical significance of possible linear associations between ratings from Rounds One, Two, and Three. Instead, the authors attempted an exploration of the data to describe potential relationships that might be used to generate hypotheses for future empirical testing with well-defined samples and more reliable and valid instruments designed to elicit specific responses from the population of rural education researchers. The reader is encouraged to examine other summary data described in this report to generate additional hypotheses for future research exploration.

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[2] Through a literature search, the authors located two articles focusing on the establishment of an annual budget for a national R & D center. In 1992, Atkinson and Jackson recommended that a "robust R & D center" would need at least $3 million annually in core funding to operate. Campbell et al. (1975) recommended stable funding for R & D centers at about $5.6 to $7.4 million per year. The authors first averaged the Campbell figure and then averaged that with the Atkinson and Jackson figure and determined the amount, $5 million, for use as the hypothetical budget.)

Selection of Participants for Commentaries

Following completion of the draft paper, a select group of RE/SIG members were invited to review the paper and provide commentaries. Again, RE/SIG members were used to facilitate interaction on research issues among the members. Using the RE/SIG membership list, the authors selected 14 members to review the paper. In terms of gender balance, eight of the 14 (57%) were male, six (43%) were female. In terms of geographic balance, one member was from each of the following areas: Alabama; California; Washington, DC; Maine; Maryland; Nebraska; New Hampshire; New Mexico; New York; Oklahoma; Pennsylvania; and West Virginia. Two were from Texas.

In terms of employer, six were employed at institutes for higher education; four were employed at Labs/Centers; three were employed at educational associations; and one was employed at a state education agency.

Collection of Draft Paper Commentaries

Following data collection and analysis, the authors shared a draft copy of the modified Delphi study results with the selected group of 14 members of the RE/SIG of AERA. These 14 members volunteered to peer review the draft copy and, if they deemed appropriate, to provide commentaries reflecting on the contents and implications of the study. This select group of professionals provided feedback to the authors of the paper in various ways. Most provided insights and suggestions, either written or oral, on how to strengthen the actual study report. The authors considered carefully their suggestions and incorporated many of them into this final report. Some commentators provided advice about continued used of the Delphi procedure as a strategy for promoting improved communications among RE/SIG members. Others wrote commentaries suggesting uses of the menu for future rural educational research. These commentaries appear as Appendix D, Commentaries, to the study.

CHAPTER THREE: FINDINGS

The findings for the three rounds of the modified Delphi study are presented below, under their designated headings.

Round One

Twenty-eight of the 29 RE/SIG members (97%) returned completed Delphi instruments for Round One. Participants carefully read each research and development area presented under the major topics and circled the degree to which they agreed that a specific area was a priority. The research and development areas presented in Round One were the areas developed by the FICE Subcommittee on Rural Education. A five-point scale of Strongly Agree, Agree, Neutral, Disagree, or Strongly Disagree was used. The authors entered data from these instruments into SPSS-PC+ and frequencies were computed. Following is a description of the findings for Round One.

The Round One Delphi instrument (see Appendix A) contained six major topics with a total of 44 research and development areas within the topics. Of the original 44 areas, 31 (70%) were retained from Round One. The authors retained the research and development areas if 90 percent of the respondents Strongly Agreed, Agreed, or were Neutral with/toward the item. Figure 2, Summary of Findings for Round One, details the proportion of research and development areas from the original FICE Agenda that were retained by RE/SIG members during Round One of the modified Delphi study rating procedure.

Of the original eight research and development areas generated by the FICE Subcommittee for Major Topic 1, six were retained by participants, for a retention rate of 75 percent. The research and development areas retained under the other five topics were: Major Topic 2, 20 percent (1 of 5); Major Topic 3, 89 percent (8 of 9); Major Topic 4, 86 percent (6 of 7); Major Topic 5, 75 percent (6 of 8); and Major Topic 6, 57 percent (4 of 7).

Specific findings for each major topic are presented below.

Major Topic 1: The Overall Effectiveness of Rural Schools

In order of decreasing agreement, participants held that the following areas were important research priorities in better understanding the overall effectiveness of rural schools:

100% Improve access to educational opportunity in isolated rural communities.

100% Assess the impact of educational reform on rural schools.

96% Identify the problems unique to the delivery of education in isolated rural communities in the following special populations: handicapped, disadvantaged, and gifted.

96% Identify characteristics of effective rural schools.

96% Assess the federal role in rural education.

93% Conduct evaluation studies of student achievement in rural schools.

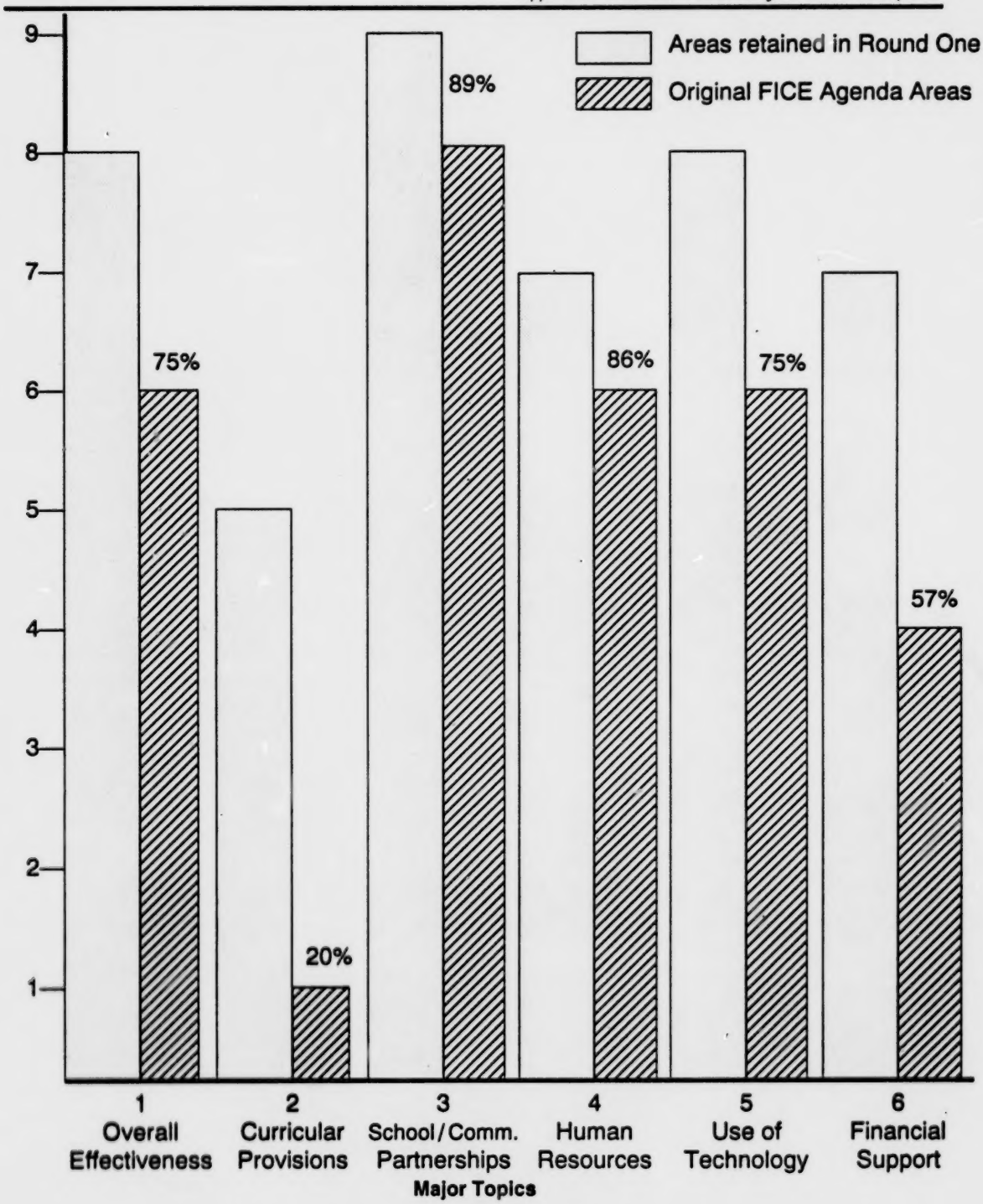

Figure 2
Summary of Findings for Round One

Major Topic 2: Curricular Provisions in Rural Schools

Participants agreed that the following area was an important research priority in better understanding the curricular provisions in rural schools:

96% Provide adult literacy improvement in isolated rural communities.

Major Topic 3: School and Community Partnerships on Behalf of Rural Schools

In order of decreasing agreement, participants held that the following areas were important research priorities in better understanding school-community partnerships on behalf of rural schools:

100% Examine the factors of rural community economies that influence rural students' decisions to remain in school and graduate.

100% Identify the social and cultural issues of isolated rural communities that impact rural education.

96% Assess how federal-state-local policies are impacting rural schools and rural communities.

96% Assess the role of the rural school in promoting employability.

93% Identify effective school/community/private sector partnerships.

93% Review legal procedures and issues pertaining to school and community partnerships on behalf of rural schools.

93% Assess if Native American communities, or their learning environments, differ from other rural communities.

93% Identify effective alternative schooling programs in the rural communities.

Major Topic 4: Human Resources for Rural Schools

In order of decreasing agreement, participants held that the following areas were important research priorities in better understanding human resources for rural schools:

100% Identify strategies that have been successful for releasing rural teachers from their classrooms for professional development.

96% Identify successful strategies for the recruitment of qualified personnel to rural schools.

96% Identify successful strategies for the retention of qualified personnel in rural schools.

96% Identify the strategies used by administrators to comply with the state certification mandates.

93% Identify successful leadership styles of effective rural school administrators.

93% Assess the impact of recent state certification mandates on teacher availability in rural schools.

Major Topic 5: Use of Technology in Rural Schools

In order of decreasing agreement, the participants held that the following areas were important research priorities for better understanding the use of technology in rural schools:

96% Assess the impact of the advanced technology on rural school curriculum.

96% Assess the implications for instructional staff and support personnel who are implementing advanced technology in rural school communities.

93% Identify rural schools that have demonstrated effective use of advanced interactive instructional technology.

93% Assess the effects of advanced technologies on traditional rural values of closeness, connection, or personal relationships in learning interactions.

93% Identify the staff development strategies that have been most successful in helping schools, teachers, and support personnel embrace and integrate advanced technologies into their overall rural school system.

93% Identify rural schools that successfully have implemented distance education via telecommunications.

Major Topic 6: Financial Support and Governance for Rural Schools

In order of decreasing agreement, participants held that the following areas were important research priorities in better understanding financial support and governance for rural schools:

100% Identify alternatives to school consolidation for rural school communities.

100% Assess how federal and state fund distribution formulas have impacted rural schools in their operations and course offerings.

100% Assess the impact on rural schools of state school reform policies on course quality, diversity of course offerings, and student outcomes.

96% Analyze the politics of school finance in rural communities.

The authors also asked the participants to write in research and development areas under the original FICE Subcommittee Agenda major topics and to suggest other major topics. Data from Round One indicate that participants suggested 23 new research and development areas for the original FICE Agenda topics and that RE/SIG members proposed one new major topic (Unique Aspects of Rural Communities) for consideration in subsequent rounds. Table 1 presents the total number of RE/SIG members' suggested research and development areas for each of the original FICE Subcommittee Agenda topics.

Table 1
Total Allocations for RE/SIG Members' Suggested Research and Development Areas

Original FICE Subcommittee Agenda Topics	RE/SIG Members' Suggested Research and Development Areas
Major Topic 1 (Overall School Effectiveness)	9
Major Topic 2 (Curriculum Provisions)	4
Major Topic 3 (School/Community Partnerships)	1
Major Topic 4 (Human Resources)	2
Major Topic 5 (Use of Technology)	4
Major Topic 6 (Finance and Governance Issues)	3
Total	23

The one new topic (Unique Aspects of Rural Communities) and the 23 newly suggested research and development areas for the original FICE Subcommittee Agenda topics were used to develop the instrument for the second round of the modified Delphi study.

Round Two

Twenty-eight of the 29 RE/SIG members (97%) returned completed Delphi instruments for Round Two. As mentioned above, the second round instrument contained the research and development areas and the major topic that participants suggested in Round One. For the second round, participants read carefully each suggested area presented under the major topics and circled the degree to which they agreed that this area was a priority. The same five-point scale used in Round One was used in Round Two. In addition, participants indicated the degree to which they agreed that the proposed new major topic (Unique Aspects of Rural Communities) was a priority. If they Strongly Agreed, Agreed, or were Neutral with/toward this topic, participants were asked to suggest research and development areas within the topic. Figure 3, Summary of Findings for Round Two, details the proportion of RE/SIG members' suggested research and development areas from Round One that were retained in Round Two.

Of the 23 research and development areas suggested by the RE/SIG members during Round One, 16 (70%) were retained for subsequent rounds of the modified Delphi study. Of the nine research and development areas generated by the RE/SIG members for Major Topic 1, seven (78%) were retained for the final round of the Delphi study. Under Major Topic 2, two of the four new areas (50%) were retained; the new area proposed under Major Topic 3 was retained (100%); and one of the two (50%) under Major Topic 4 was retained. Under Major Topic 5, three of the four (75%) new research and development areas were retained by RE/SIG members, and two of the three (67%) were retained for Major Topic 6.

Participants also indicated if they agreed that the suggested topic from Round One, Unique Aspects of Rural Communities, was a priority for research. Of the 28 respondents for Round Two, 83 percent Strongly Agreed, Agreed, or were Neutral with/toward this topic. Based on the cut-off rate of 90 percent, this topic was not carried over for Round Three. In addition, the 16 research and development areas suggested by participants under this topic were also removed from the final Delphi instrument.

Specific findings for each major topic retained are presented below.

Major Topic 1: The Overall Effectiveness of Rural Schools

In order of decreasing agreement, participants held that the following areas were important research priorities in better understanding the overall effectiveness of rural schools:

96% Assess the role of rural schools in an "integrated services" approach to meeting community needs.

96% Assess SEA role in rural education.

96% Assess teacher education institutions' role in rural education.

96% Assess student expectations—view of the future.

93% Assess the degree to which rural schools are educating students for participation in a national economy versus a local economy.

93% Assess the ways in which rural school culture breaks down class distinctions or promotes increased cultural understanding.

93% Understand the change process and extent to which change initiated in one part of school can encourage change throughout school culture.

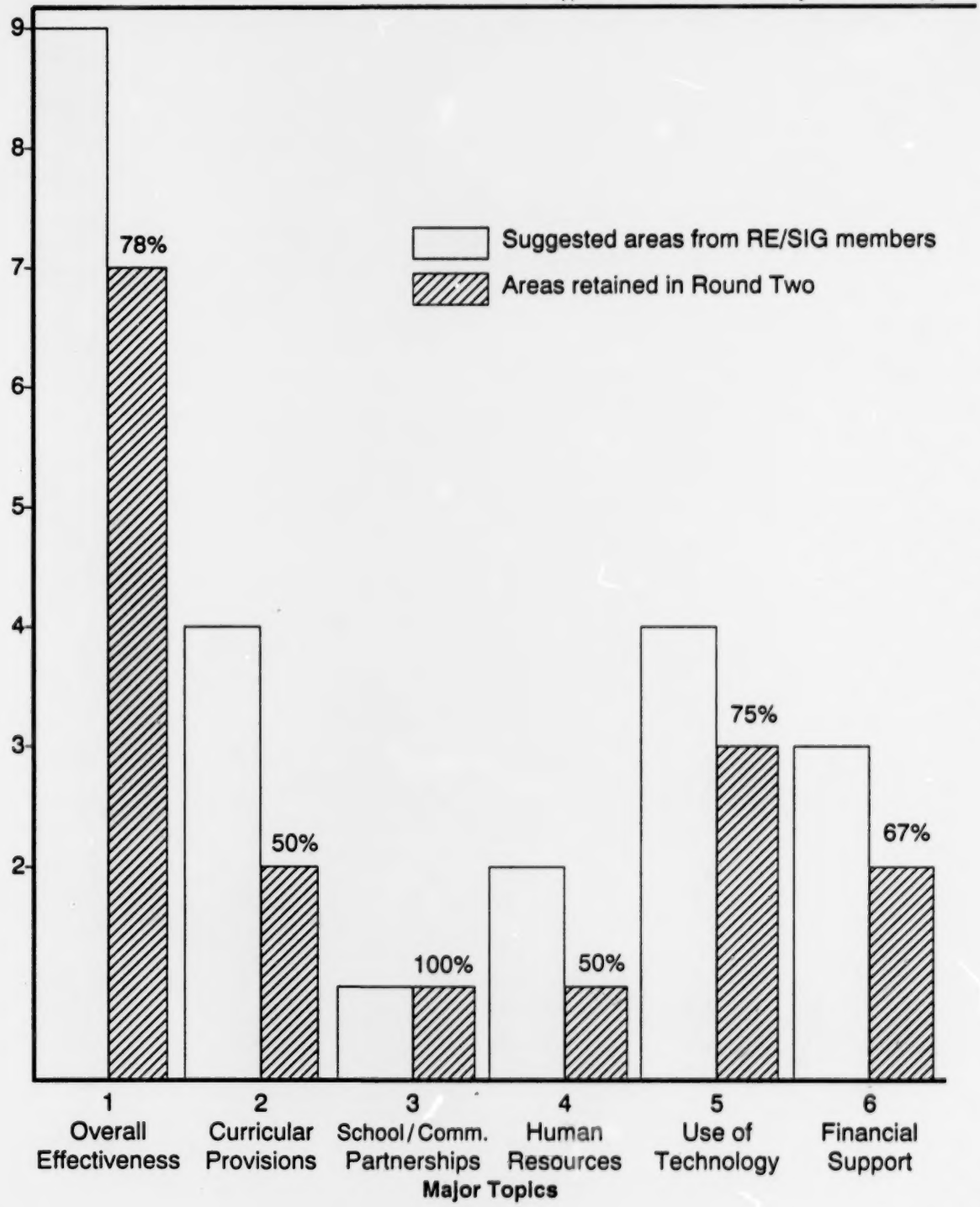

Figure 3
Summary of Findings for Round Two

Major Topic 2: Curricular Provisions in Rural Schools

In order of decreasing agreement, participants held that the following areas were important research priorities in better understanding the curricular provisions in rural schools:

96% Assess satisfaction of students, teachers, administrators, parents, and community leaders with current curriculum and instruction.

93% Assess how state and federal curriculum development projects consider the needs of rural schools.

Major Topic 3: School and Community Partnerships on Behalf of Rural Schools

Participants agreed that the following area was an important research priority in better understanding school and community partnerships on behalf of rural schools:

100% Assess level of parental and community involvement in rural area.

Major Topic 4: Human Resources for Rural Schools

Participants agreed that the following area was an important research priority in better understanding human resources for rural schools:

100% Identify effective beginning teacher mentoring programs for rural schools.

Major Topic 5: Use of Technology in Rural Schools

In order of decreasing agreement, participants held that the following areas were important research priorities in better understanding use of technology in rural schools:

96% Identify innovative, low-cost alternative programs to those delivered via telecommunications.

93% Conduct technology cost-effectiveness studies.

93% Assess level of private support for use of technology in rural schools.

Major Topic 6: Financial Support and Governance for Rural Schools

Participants held that the following areas were important research priorities in better understanding financial support and governance for rural schools:

96% Look at ways to equalize salary levels for teachers/administrators in rural schools compared to salary levels for those in large communities.

96% Compare and contrast the roles and strategies of rural interest groups in the several school finance court cases in the states.

Rural Education Research and Development Menu

Research and development areas retained in Round Two were combined with the retained research and development areas from Round One to form the Rural Education Research and Development Menu used for Round Three of this modified Delphi study. This menu consists of the six major topics generated by the FICE Subcommittee on Rural Education and 47 research and development areas within those topics. The research and development areas were generated by both the FICE Subcommittee and the RE/SIG members. Table 2 details the Rural Education Research and Development Menu.

Table 2
The Rural Education Research and Development Menu

Major Topic 1: The Overall Effectiveness of Rural Schools

*Area A: Improve access to educational opportunity in isolated rural communities.

*Area B: Identify the problems unique to the delivery of education in isolated rural communities in the following special populations: handicapped, disadvantaged, and gifted.

*Area C: Identify characteristics of effective rural schools.

*Area D: Conduct evaluation studies of student achievement in rural schools.

*Area E: Assess the federal role in rural education.

*Area F: Assess the impact of educational reform on rural schools.

Area G: Assess the degree to which rural schools are educating students for participation in a national economy vs. a local economy.

Area H: Assess SEA role in rural education.

Area I: Assess teacher education institutions' role in rural education.

Area J: Assess student expectations—view of the future.

Area K: Assess the ways in which rural school culture breaks down class distinctions or promotes increased cultural understanding.

Area L: Assess the role of rural schools in an "integrated services" approach to meeting community needs.

Area M: Understand the change process and extent to which change initiated in one part of school can encourage change throughout school culture.

Major Topic 2: Curricular Provisions in Rural Schools

*Area A: Provide adult literacy improvement in isolated rural communities.

Area B: Assess satisfaction of students, teachers, administrators, parents, and community leaders with current curriculum and instruction.

Area C: Assess how state and federal curriculum development projects consider the needs of rural schools.

Major Topic 3: School and Community Partnerships on Behalf of Rural Schools

*Area A: Identify effective school/community/private sector partnerships.

*Area B: Assess how federal/state/local policies are impacting rural schools and rural communities.

*Area C: Review legal procedures and issues pertaining to school and community partnerships on behalf of rural schools.

*Area D: Examine the factors of rural community economies that influence rural students' decisions to remain in school and graduate.

*Area E: Assess if Native American communities, or their learning environments, differ from other rural communities.

*Area F: Assess the role of the rural school in promoting employability.

*Area G: Identify effective alternative schooling programs in the rural communities.

*Area H: Identify the social and cultural issues of isolated rural communities that impact rural education.

Area I: Assess level of parental and community involvement in rural area.

Table 2
(continued)

Major Topic 4: Human Resources for Rural Schools

*Area A: Identify successful strategies for the recruitment of qualified personnel to rural schools.

*Area B: Identify successful strategies for the retention of qualified personnel in rural schools.

*Area C: Identify strategies that have been successful for releasing rural teachers from their classrooms for professional development.

*Area D: Identify successful leadership styles of effective rural school administrators.

*Area E: Identify the strategies used by administrators to comply with the state certification mandates.

*Area F: Assess the impact of recent state certification mandates on teacher availability in rural schools.

Area G: Identify effective beginning teacher mentoring programs for rural schools.

Major Topic 5: Use of Technology in Rural Schools

*Area A: Identify rural schools that have demonstrated effective use of advanced interactive instructional technology.

*Area B: Assess the impact of the advanced technology on rural school curriculum.

*Area C: Assess the effects of advanced technologies on traditional rural values of closeness, connection, or personal relationships in learning interactions.

*Area D: Assess the implications for instructional staff and support personnel who are implementing advanced technology in rural school communities.

*Area E: Identify the staff development strategies that have been most successful in helping schools, teachers, and support personnel embrace and integrate advanced technologies into their overall rural school system.

*Area F: Identify rural schools that successfully have implemented distance education via telecommunications.

Area G: Conduct technology cost-effectiveness studies.

Area H: Assess level of private support for use of technology in rural schools.

Area I: Identify innovative, low-cost alternative programs to those delivered via telecommunications.

Major Topic 6: Financial Support and Governance for Rural Schools

*Area A: Analyze the policies of school finance in rural communities.

*Area B: Identify alternatives to school consolidation for rural school communities.

*Area C: Assess how federal and state fund distribution formulas have impacted rural schools in their operations and course offerings.

*Area D: Assess the impact on rural schools of state school reform policies on course quality, diversity of course offerings, and student outcomes.

Area E: Look at ways to equalize salary levels for teacher/administrators in rural schools compared to salary levels for those in large communities.

Area F: Compare and contrast the roles and strategies of rural interest groups in the several school finance court cases in the states.

*Original items, generated by the FICE Subcommittee, retained.

Table 3 details the origins of these 47 research and development areas and indicates under which of the six major topics the areas belong.

Round Three

The third round of the Delphi study consisted of two parts. Using the Rural Education Research and Development Menu (above) as the final Delphi instrument, participants: (A) prioritized the six major topics and (B) developed a research and development budget to address the six major topics. Findings for each part will be discussed below.

Part A. In Part A, participants reviewed the six major topics and their associated research and development areas. Next, participants ranked the six major topics from 1 to 6, with 1 being the highest and 6 the lowest, to reflect the order of priority in which they believed the topics should be researched.

All 29 participants returned completed ranking forms. The authors entered data from these forms into SPSS-PC+ and descriptive statistics were computed. Table 4 displays the six major topics and the frequencies of the rankings per each topic by the 29 participants.

The authors converted findings from Table 4 to

Table 3
Origins of the Research and Development Areas on the Rural Education Research and Development Menu

Original FICE Subcommittee Agenda Topics	FICE Generated R & D Areas	RE/SIG Member Generated R & D Areas	Total R & D Areas Per Topics
Major Topic 1 (Overall School Effectiveness)	6 (46%)	7 (54%)	13
Major Topic 2 (Curriculum Provisions)	1 (33%)	2 (67%)	3
Major Topic 3 (School/Community Partnerships)	8 (89%)	1 (11%)	9
Major Topic 4 (Human Resources)	6 (86%)	1 (14%)	7
Major Topic 5 (Use of Technology)	6 (67%)	3 (33%)	9
Major Topic 6 (Finance and Governance Issues)	4 (67%)	2 (33%)	6
Totals	31	16	47

point values for each of the six major topics. These point values were then used to determine the rank order of the six major topics. Table 5 displays the rank order for each topic, the point value for each of the six major topics, and the percentage of the total point value for each of the topics.

Table 4
Frequencies of Rankings Per Each of the Major Topics

Agenda Topics	RE/SIG Members' Rankings					
	1 (highest)	2	3	4	5	6 (lowest)
Major Topic 1 (Overall School Effectiveness)	17	4	1	4	2	1
Major Topic 2 (Curriculum Provisions)	1	2	5	5	6	10
Major Topic 3 (School/Community Partnerships)	6	6	4	5	3	5
Major Topic 4 (Human Resources)	2	6	7	7	6	1
Major Topic 5 (Use of Technology)	1	4	8	5	6	5
Major Topic 6 (Finance and Governance Issues)	2	7	4	3	6	7

Table 5
Point Values for Major Topics

Ranking	Major Topics	Point Value Per Topic	Percentage of Total Point Value
1	1 (Overall School Effectiveness)	143	23%
2	3 (School/Community/ Partnerships)	108	18%
3	4 (Human Resources)	104	17%
4	6 (Finance and Governance Issues)	91	15%
5	5 (Use of Technology)	90	15%
6	2 (Curriculum Provisions)	73	12%

The RE/SIG members seemed to have a clear idea of which of these topics they felt ranked highest and lowest in terms of priority for research and development; however, they were less clear in terms of the middle-scale rankings. Table 5 indicates that 70 points separated the topic ranked highest in priority from the topic ranked lowest. However, only 18 points separated the topic ranked second in priority from the topic ranked next to last in order of priority.

The RE/SIG members ranked Major Topic 1: The Overall Effectiveness of Rural Schools as having the highest priority for research and development. A 35-point difference separated this topic from the topic ranked number 2, Major Topic 3: School and Community Partnerships on Behalf of Rural Schools. Only four points separated Major Topic 3 from Major Topic 4: Human Resources for Rural Schools, which was ranked third in terms of priority for research and development. Major Topic 6: Financial Support and Governance for Rural Schools was ranked fourth in order of priority, 13 points below the topic ranked third. Just one point separated the fourth and fifth ranking. Major Topic 5: Use of Technology in Rural Schools received 90 points and ranked fifth. Major Topic 2: Curricular Provisions in Rural Schools was viewed as least important in terms of priority for research and development in rural education. This topic ranked 17 points below the topic ranked fifth.

Part B. In Part B, the RE/SIG members assumed that they were a director of a newly-formed national R & D center for rural educational research and development. In this role, they were given a hypothetical $5,000,000 budget to allocate for rural educational research and development for FY 93.

All 29 RE/SIG members returned completed response cards for Part B. Data for total number of dots per major topic were entered into SPSS-PC+ and descriptive statistics were computed. The findings for Part B are explained in the following two tables. Table 6 displays the frequencies of dots per major topic allocated by the 29 participants.

Table 6

Frequencies of Dot Allocations Per Major Topic

Agenda Topics	Frequencies of Dots ($500,000 each)										
	0	1	2	3	4	5	6	7	8	9	10
Major Topic 1 (Overall School Effectiveness)	1	10	7	6	4	1					
Major Topic 2 (Curriculum Provisions)	7	15	5		1		1				
Major Topic 3 (School/Community Partnerships)	2	14	9	4							
Major Topic 4 (Human Resources)	3	11	14		1						
Major Topic 5 (Use of Technology)	1	10	13	5							
Major Topic 6 (Finance and Governance Issues)	1	13	9	6							

This table indicates the wide array of allocation utilized by the RE/SIG members. For example, for Major Topic 1, 10 participants allocated one dot; seven allocated two dots; six allocated three dots; four allocated four dots; one allocated five dots; and one did not allocate any funds for this topic. Of interest on this table is that seven participants did not allocate any funds toward Major Topic 2.

Table 7 displays the mean allocation assigned by participants to each major topic. The major topics are presented in descending order, in terms of their mean number of dots allocated and their mean allocation.

Table 7
Mean Allocation Allotted by Participants Per Major Topic

Major Topics	Mean Number of Dots Allocated	Mean Allocation
1 (Overall School Effectiveness)	2.172	$1,086,000
5 (Use of Techology)	1.759	$879,500
6 (Finance and Governance Issues)	1.690	$845,000
3 (School/Community Partnerships)	1.517	$758,500
4 (Human Resources)	1.483	$741,500
2 (Curriculum Provisions)	1.207	$603,500
Total		$4,914,000

Major Topic 1 received the highest mean allocation ($1,086,000) with Major Topic 2 receiving the lowest mean allocation ($603,500). The difference in mean allocations ranged from a high of $206,500 (difference between Major Topic 1 and Major Topic 5, ranked first and second in terms of funding) to a low of $17,000 (difference between Major Topic 3 and Major Topic 4, ranked fourth and fifth in terms of funding). Major Topics 5 and 6 ranked second and third, respectively, in mean allocations, differed by $34,500. Participants seemed to have more difficulty differentiating between Major Topics 5 and 6 and Major Topics 3 and 4. In terms of allocating funding, participants gave similar funding to Topics 5 and 6 and Topics 3 and 4.

Table 8 compares the results from Part A and Part B of Round Three. This table displays the rankings for all six major topics in terms of their priority for research and development and in terms of their mean allocation for research and development funding.

Table 8
Comparison of Rankings for Part A and Part B of Round Three

Major Topics	Priority Rank R & D	Rank for Mean Allocation of Funding
1 (Overall School Effectiveness)	1	1
2 (Curriculum Provisions)	6	6
3 (School/Community Partnerships)	2	4
4 (Human Resources)	3	5
5 (Use of Technology)	5	2
6 (Finance and Governance Issues)	4	3

Major Topics 1 and 2 were ranked consistently by all 29 participants in both Parts A and B of Round Three. In other words, participants viewed Major Topic 1 as having the highest research and development priority and, therefore, they allocated the most research and development dollars toward this topic. On the other hand, Major Topic 2 was viewed as least important in terms of priority and the allocated budget reflects these views.

The other four topics were not ranked consistently across both parts; however, their rankings are interesting. In terms of priority for research and development, Major Topics 3 and 4 were ranked second and third; but in terms of mean allocation of funding, these two topics were ranked fourth and fifth. Similar rankings occurred with Major Topics 5 and 6. These two topics were ranked fifth and fourth, respectively, in terms of priority for research and development; but they were ranked second and third in terms of budget allocation.

Post-hoc analysis. After the authors completed an initial descriptive statistical analysis of the Round Three ranking and dot allocation data, they conducted an exploratory post hoc analysis of potential relationships between the rank assignments and funding allocations. The purpose of the post hoc analysis was to describe any statistically significant findings that could be interpreted to suggest possible variable relationships. Knowledge of these relationships could be used to simplify future surveys related to the rural education research topics or to suggest hypotheses for future studies.

The reader is reminded that the authors conducted an entirely empirical post hoc analysis of the rating data collected in the modified Delphi study. The authors had no hypotheses to test or

any substantive theory to guide interpretation of the statistical significance of possible linear associations between ratings from Rounds One, Two, and Three. Moreover, the sample of opinions from which these data were generated was not randomly selected from a well-defined population of rural education researchers. As a result, the distributions of the sample data do not meet basic assumptions for use of the common statistical tests described below. Therefore, no statistically valid interpretation of the following results was attempted. None should be inferred by the reader.

Instead, this exploration of the data was designed to use standard statistical significance testing thought to be appropriate for this type of data to describe potential hypothetical relationships among the modified Delphi ratings from three rounds of data generation. The only relationships discussed below were those that were found to be statistically significant in this limited set of nonrandom data.

In the case of the Spearman rank correlation statistic, a correlation value and approximate statistical significance level are offered for the reader's information. In the case of the stepwise regression results, only the metric regression coefficient is presented to suggest a possible direction for the hypothetical relationships described. No additional statistical information is given to avoid over interpretation of these questionable statistical tests by readers. The reader is encouraged to examine this evidence with skepticism and to use other summary data described in this report to generate additional hypotheses for future research exploration.

Possible association of rank assignments and funding allocations. The authors found three of the 36 (8%) possible Spearman rank correlations between topic ranks and funding allocations to be statistically significant ($p < 0.10$ with 19 degrees of freedom). First, as the rank assigned to Major Topic 1 (Overall Effectiveness of Rural Schools) rose, the amount of funding allocated to the topic appeared to decrease ($r = -0.4846$, $p < 0.035$). Second, as the rank assigned to Major Topic 3 (School and Community Partnerships) rose, the amount of funding allocated to Major Topic 1 appeared to increase ($r = 0.64$, $p < 0.003$). Finally, as the rank assigned to Major Topic 3 rose, the amount of funding allocated to Major Topic 3 decreased ($r = -0.42$, $p < 0.08$).

These findings could be interpreted to suggest that, when individuals are asked to rank prioritize these rural education topics, and then to allocate research funding amounts differentially to the same topics, they logically relate some topics with others while treating the rest as independent topics for research exploration.

What seemed to be mildly surprising was the fact that only three of the possible 36 topic relationships were found to be statistically significant, since the wording of the topics suggests more correlated topics than the two (Topics 1 and 3) empirically verified through the ranking and dot allocation processes. The low sample size in this study and the moderately reliable modified Delphi process rating system may help to account for the low number of statistically significant associations described. In the future, researchers may wish to use similar correlational analysis research to more systematically investigate relationships between these rural education research topics.

Possible prediction of rankings and funding allocations from Round One and Round Two ratings of agreement with research and development areas. Possible relationships (linear regression coefficients) between Round One and Round Two ratings (independent variables for each topic) and Round Three rankings and funding allocations (dependent variables for each topic) were explored via stepwise regression analysis ($p < .10$ tolerance limits for tests of regression coefficient significance). One regression analysis was conducted for each of the six major topics considered. The purpose of this post hoc analysis was to describe whether rankings and funding allocation outcomes could be predicted from knowledge of previous "agreement" ratings of the same issues. The results are summarized below.

Major Topic 1: The Overall Effectiveness of Rural Schools

The rating of Area G (Conduct evaluation studies of student achievement in rural schools) [1.39] from Round One and the rating of Area B

Assess the students who leave the rural community and become successful either through advanced education or professional life [b = 1.03] from Round Two could be used to predict the priority ranking assigned to Major Topic 1 in Round Three. Basically, as disagreement with these area statements G and B increased, rank scores increased. However, none of the area ratings from Rounds One and Two could be used to predict the funding allocations assigned to Major Topic 1 in Round Three.

- **Major Topic 2**: Curricular Provisions in Rural Schools

Only the rating of Area D (Improve cooperation with the private sector for rural education) [b = -0.88] from Round One could be used to predict the priority ranking assigned to Major Topic 2 in Round Three. As agreement with this area increased, the ranking score for Major Topic 2 increased. None of the area ratings from Rounds One and Two could be used to predict the funding allocations assigned to Major Topic 2 in Round Three.

- **Major Topic 3**: School and Community Part nerships on Behalf of Rural Schools

Only the rating of Area F (Identify effective postsecondary and adult education programs in rural communities) [b = -1.53] from Round One could be used to predict the priority ranking assigned to Major Topic 3 in Round Three. As agreement with Area F increased, the rank scores for Major Topic 3 increased. None of the area ratings from Rounds One and Two could be used to predict the funding allocations assigned to Major Topic 3 in Round Three.

- **Major Topic 4**: Human Resources for Rural Schools

Only the rating of Area G (Assess the impact of recent state certification mandates on teacher availability in rural schools) (b = -0.96) from Round One could be used to predict the priority ranking assigned to Major Topic 4 in Round Three. As agreement with Area G increased, the rank scores for Major Topic 4 increased. None of the area ratings from Rounds One and Two could be used to predict the funding allocations assigned to Major Topic 4 in Round Three.

- **Major Topic 5**: Use of Technology in Rural Schools

None of the area ratings from Rounds One and Two could be used to predict either the topic priority ranking or funding allocations assigned to Major Topic 5 in Round Three.

- **Major Topic 6**: Financial Support and Governance for Rural Schools

Only the rating of Area B (Analyze the politics of school finance in rural communities) [b = 1.05] from Round One could be used to predict the priority ranking assigned to Major Topic 6 in Round Three. As disagreement with Area B increased, the ranking score for Major Topic 6 increased. None of the area ratings from Rounds One and Two could be used to predict the funding allocations assigned to Major Topic 6 in Round Three.

It appears as if a few areas of agreement from previous measures of respondent ratings of these rural education topics can be described in a direct linear relationship to later priority rankings or funding allocations of the same topics. No relationship could be drawn between agreement ratings and funding allocations. If these findings are not entirely due to chance, future research may simplify estimation of ranking and funding allocation outcomes by using simple agreement rating items to "predict" these outcomes. More importantly, researchers may gain additional focus for future studies on these topics by exploring the conceptual relationships between the research and development areas represented in the rating scales of Rounds One and Two, and the six major rural education research topics that this study has empirically verified as worthy of future study.

CHAPTER FOUR: CONCLUSIONS

The authors drew certain conclusions from the findings presented above. These conclusions are presented below and are summarized under three themes: Uses of the Rural Education Research and Development Menu, Implications for Future Rural Educational Research and Development, and Implications for Future Delphi Studies.

Uses of the Rural Education Research and Development Menu

For readers, the authors and commentators suggest the following uses of the Rural Education Research and Development Menu described in this report.

- Review topics and areas on the menu. Develop a process for involving rural educators, students, and citizens (regional, statewide, or local) to determine priorities for the topics and areas on the menu.
- Develop specific empirical questions for priority topics and areas.
- Identify other research teams that are interested in working on these issues. Form research collaborations on rural education issues.
- Create a dialogue among educational researchers that focuses on high priority rural education topics and areas. Consider using Internet (or other networks) to facilitate this dialogue.
- Evaluate periodically the validity of the Rural Education Research and Development Menu's topics and areas.

Implications for Future Rural Educational Research and Development

Certain implications for future rural educational research and development can be derived from this study. These implications are as follows:

- The RE/SIG members validated the contents of the original 1991 FICE Agenda topics and research and development areas. Through two rounds of consensus building, these RE/SIG members indicated that they agreed with the content validity of the original FICE Agenda's six major topics. In addition, the RE/SIG members agreed with the content validity of 31 of the 44 (70%) original FICE Agenda research and development areas within each of the six topics.
- The RE/SIG members expanded the contents of the original 1991 FICE Agenda research and development areas. RE/SIG members suggested 23 new research and development areas, across the six major topics, during the first round of this study. In Round Two, the RE/SIG members validated the contents of these new areas and agreed on 16 of them for inclusion in Round Three. Therefore, the RE/SIG members expanded the original FICE Agenda by 16 research and development areas.

- This research effort produced an updated menu of researchable issues available for use by rural educational researchers. Building upon the earlier efforts of the FICE Subcommittee on Rural Education, the RE/SIG members added their knowledge and insights and adapted the original 1991 Agenda to reflect changes in the conditions of rural educational research. The Rural Education Research and Development Menu should continue to facilitate a dialogue on the problems and contributions of rural education, encourage research and development on rural concerns, and promote coordination and collaboration among educational researchers.

- In addition to an updated agenda, this research effort provided a first attempt at prioritizing the six major topics and their research and development areas. This priority ranking, along with the hypothetical budget allocations, may assist rural educational researchers with decisions concerning their research and development resources.

Implications for Future Delphi Studies

As mentioned above, this study used a modified Delphi technique in that participants did not gain consensus on the Round Three activities: priority ranking and budget allocation. Certain implications can be derived from these activities for future Delphi studies. These implications follow:

- The authors' modification of this Delphi procedure, the priority ranking and allocation of a hypothetical budget, could provide educational researchers with a starting point for future Delphi studies. In this study, RE/SIG members had difficulty differentiating among four of the six major topics in terms of priority and budget allocation. Future Delphi participants could first be asked to gain consensus on the priority rankings before they work toward consensus on the budget allocations. Agreeing on the priority rankings before allocating a hypothetical budget might help alleviate some of the difficulties experienced by the RE/SIG members in this modified Delphi study.

- An attempt to describe possible post hoc relationships between major topic ranks and funding allocations did little to clarify the findings of this study. Only a few of the expected relationships between topics were empirically supported by evidence measured in this study. Another suggestion for future Delphi studies might be to systematically study the rating relationships among topics through factor analysis. Use of a reduced set of topic factors may enable potential raters to more precisely identify and prioritize the items.

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APPENDICES

Appendix A:
Round One
Instrument Documentation

AEL

Improving Education Through Research and Development

MEMORANDUM

TO: Rural Education SIG Members

FROM: John R. Sanders

DATE: February 6, 1992

SUBJECT: Delphi Study

Thank you for agreeing to participate in our RE/SIG Delphi study. The purpose of the study is to identify a consensus list of priority research topics for our SIG.

This is the first of three questionnaires we will use in this study. We hope you will hang in there with us for these several rounds of questions. At the end, we will assess whether or not the effort has been worthwhile and whether there are viable collaborative inquiries that we should consider--perhaps with other SIGs or with other organizations.

But first things first. Please complete the enclosed questionnaire and mail it back in the return envelope ASAP. We will compile the results and get them back to you with a second round questionnaire. Thanks again for participating.

JRS:ksc

Enclosures

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ROUND ONE DELPHI INSTRUMENT

Areas for Research and Development on Rural Education

In 1989, the Federal Interagency Committee on Education (FICE) Subcommittee on Rural Education examined the state of rural education research, drawing upon the knowledge of specialists within the federal government. From this examination, six topics emerged as priorities for future research on rural education. These six priority topics, which are described in An Agenda for Research and Development on Rural Education, are: The Overall Effectiveness of Rural Schools; Curricular Provisions in Rural Schools; School and Community Partnerships on Behalf of Rural Schools; Human Resources for Rural Schools; Use of Technology in Rural Schools; and Financial Support and Governance for Rural Schools. For each topic, members of the Subcommittee generated sample research questions or areas of focus.

Below are the six priority topics and the research questions as generated by the FICE Subcommittee on Rural Education. As a participant in Round One of this Delphi study, please read carefully each area presented under the six major topics and circle the degree to which you agree that this area is a priority: SA (Strongly Agree), A (Agree), N (Neutral), D (Disagree), and SD (Strongly Disagree).

Following the FICE Subcommittee items is an opportunity for you to nominate other areas and topics, not included on the Subcommittee's agenda. Please complete the demographic items on the last page of the questionnaire.

Major Topic 1: The Overall Effectiveness of Rural Schools

(Researchers should clearly define the factors that describe and affect the rural community being studied, such as geographic isolation; economy of scale; and variability in culture, economy, and social environment.)

Area A. Identify successful instructional delivery practices in rural schools that can be replicated.

SA A N D SD

Area B. Improve access to educational opportunity in isolated rural communities.

SA A N D SD

Area C. Improve school dropout prevention programs in rural schools.

SA A N D SD

Area D. Identify the problems unique to the delivery of education in isolated rural communities in the following special populations:

Handicapped	SA	A	N	D	SD
Disadvantaged	SA	A	N	D	SD
Gifted	SA	A	N	D	SD

Area E. Identify characteristics of effective rural schools.

SA A N D SD

Area F. Assess the impact of educational reform on rural schools.

SA A N D SD

Area G. Conduct evaluation studies of student achievement in rural schools.

SA A N D SD

Area H. Assess the federal role in rural education.

SA A N D SD

Area I. Within this topic, Overall Effectiveness of Rural Schools, what other areas of research, not listed above, should be examined? (Please begin areas with a verb, as preceding examples.)

_____

_____

_____

_____

Major Topic 2: Curricular Provisions in Rural Schools

(Serious curricular concerns have been raised over needs assessment, individualized instruction, design and implementation, cooperation with private sector development, access, and adult literacy improvement.)

Area A. Identify effective needs assessment techniques for rural education.

SA A N D SD

Area B. Identify individualized instruction plans in isolated rural communities.

SA A N D SD

Area C. Assess curriculum design and/or implementation.

SA A N D SD

Area D. Improve cooperation with the private sector for rural education.

SA A N D SD

Area E. Provide adult literacy improvement in isolated rural communities.

SA A N D SD

Area F. Within this topic, Curricular Provisions in Rural Schools, what other areas of research, not listed above, should be examined? (Please begin areas with a verb, as preceding examples.)

_____

_____

_____

_____

Major Topic 3: School and Community Partnerships on Behalf of Rural Schools

(Research on school and community relationships should describe the environment within which learning occurs.)

Area A. Identify effective school/community/private sector partnerships.

SA A N D SD

Area B. Assess how federal-state-local policies are impacting rural schools and rural communities.

SA A N D SD

Area C. Review legal procedures and issues pertaining to school and community partnerships on behalf of rural schools.

SA A N D SD

Area D. Examine the factors of rural community economies that influence rural students' decisions to remain in school and graduate.

SA A N D SD

Area E. Assess if Native American communities, or their learning environments, differ from other rural communities.

SA A N D SD

Area F. Identify effective postsecondary and adult education programs in rural communities.

SA A N D SD

Area G. Assess the role of the rural school in promoting employability.

SA A N D SD

Area H. Identify effective alternative schooling programs in the rural communities.

SA A N D SD

Area I. Identify the social and cultural issues of isolated rural communities that impact rural education?

SA A N D SD

Area J. Within this topic, School and Community Partnerships on Behalf of Rural Schools, what other areas of research, not listed above, should be examined? (Please begin areas with a verb, as preceding examples.)

_____

_____

_____

_____

Major Topic 4: Human Resources for Rural Schools

(Research on rural school personnel should be focused on recruitment, retention, professional development, administration, and supervision.)

Area A. Identify successful strategies for the recruitment of qualified personnel to rural schools.

SA A N D SD

Area B. Identify successful strategies for the retention of qualified personnel in rural schools.

SA A N D SD

Area C. Identify strategies that have been successful for releasing rural teachers from their classrooms for professional development.

SA A N D SD

Area D. Identify successful teaching styles of effective rural school educators.

SA A N D SD

Area E. Identify successful leadership styles of effective rural school administrators.

SA A N D SD

Area F. Identify the strategies used by administrators to comply with the state certification mandates.

SA A N D SD

Area G. Assess the impact of recent state certification mandates on teacher availability in rural schools.

SA A N D SD

Area H. Within this topic, Human Resources for Rural Schools, what other areas of research, not listed above, should be examined? (Please begin areas with a verb, as preceding examples.)

_____

_____

_____

_____

Major Topic 5: Use of Technology in Rural Schools

(The learning outcomes achieved from each new technological advance need to be studied--individually and comparatively.)

Area A. Identify rural schools that have demonstrated effective use of advanced interactive instructional technology.

SA A N D SD

Area B. Assess the impact of the advanced technology on rural school curriculum.

SA A N D SD

Area C. Assess the impact of the advanced technology on rural school students' outcomes.

SA A N D SD

Area D. Assess the effects of advanced technologies on traditional rural values of closeness, connection, or personal relationships in learning interactions.

SA A N D SD

Area E. Assess the implications for instructional staff and support personnel who are implementing advanced technology in rural school communities.

SA A N D SD

Area F. Identify the staff development strategies that have been most successful in helping schools, teachers, and support personnel embrace and integrate advanced technologies into their overall rural school system.

SA A N D SD

Area G. Identify rural schools that successfully have implemented distance education via telecommunications.

SA A N D SD

Area H. Assess the computer literacy of rural school communities that have implemented advanced technology.

SA A N D SD

Area I. Within this topic, Use of Technology in Rural Schools, what other areas of research, not listed above, should be examined? (Please begin areas with a verb, as preceding examples.)

_____

_____

_____

_____

Major Topic 6: Financial Support and Governance for Rural Schools

(Research should focus on the effects of school aid financial distribution formulas used by the states and by the federal government, the impact of school consolidation, and issues of education standards and quality.)

Area A. Identify alternative funding systems.

SA A N D SD

Area B. Analyze the politics of school finance in rural communities.

SA A N D SD

Area C. Assess the impact of school district restructuring and consolidation on the rural school communities.

SA A N D SD

Area D. Identify alternatives to school consolidation for rural school communities.

SA A N D SD

Area E. Identify successful strategies to increase rural issues awareness in state governments.

SA A N D SD

Area F. Assess how federal and state fund distribution formulas have impacted rural schools in their operations and course offerings.

SA A N D SD

Area G. Assess the impact on rural schools of state school reform policies on course quality, diversity of course offerings, and student outcomes.

SA A N D SD

Area H. Within this topic, Financial Support and Governance for Rural Schools, what other areas of research, not listed above, should be examined? (Please begin areas with a verb, as preceding examples.)

_____

_____

_____

_____

Other Major Topics

Are there any other major topics not included in the Subcommittee's agenda that you would like to nominate for consideration in subsequent rounds of this study?

_____

_____

_____

_____

Demographic Information

Name (optional): _____

Your professional role (check one):

_____ Central Office Staff
_____ Local Board of Education
_____ Principal/Assistant Principal
_____ Teacher
_____ Higher Education Administrator
_____ Higher Education Professor
_____ CSSO/Staff
_____ Governor/Staff
_____ State Board of Education
_____ State Legislator/Staff
_____ Researcher
_____ Other

Your employing agency (check one):

_____ Association
_____ Lab/Center
_____ SEA
_____ H/HS
_____ LEA
_____ USDOE
_____ IHE
_____ Policy
_____ Other
_____ ISA

Appendix B:
Round Two
Instrument Documentation

AEL

Improving Education Through
Research and Development

MEMORANDUM

TO: Rural Education SIG Members
FROM: John R. Sanders
DATE: May 29, 1992

Thank you for participating in Round One of the Delphi study for the Rural Education SIG (RE/SIG) group. Of the 28 RE/SIG members* selected to participate in the study, all returned usable instruments and the data were aggregated for Round Two.

Of the original 44 items in the Round One Delphi instrument, 31 were retained for Round Two. Items were retained if 90 percent of the respondents Strongly Agreed, Agreed, or were Neutral with/toward the item. (See Attachment #1 for a complete list of items retained for Round Two.)

The second round of the Delphi study (Attachment #2) contains the items participants provided in Round One as write-in answers for other areas of research, not included on the Subcommittee's agenda, that participants felt should be examined.

In the second round of the Delphi study, we would like you to review these suggested areas of research and tell us the degree to which you agree that these areas are necessary for inclusion in later rounds of the Delphi study. Also, one participant provided a suggestion for a major topic, not included on the Subcommittee's agenda, that should be examined. We would like you, in Round Two, to tell us the degree to which you agree that this major topic should be added to the agenda developed by the subcommittee. If you circle SA, A, or N for this major topic, listed as Major Topic 7, please identify and list areas of research related to this topic that you feel should be examined more closely.

Please return the survey in the enclosed self-addressed, stamped envelope by Wednesday, June 17, 1992.

JRS:ksc
Attachments

*Originally, a purposeful sample of 30 RE/SIG members was selected for this study. One selected member did not return our calls and therefore did not participate in the study. The other RE/SIG member returned a completed survey to AEL; however, the survey was received well past the deadline and was not included in the Round One results.

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ATTACHMENT #1

ITEMS RETAINED FROM ROUND ONE

Major Topic 1: The Overall Effectiveness of Rural Schools

- Improve access to educational opportunity in isolated rural communities.
- Identify the problems unique to the delivery of education in isolated rural communities in the following special populations: handicapped, disadvantaged, and gifted.
- Identify characteristics of effective rural schools.
- Assess the impact of educational reform on rural schools.
- Conduct evaluation studies of student achievement in rural schools.
- Assess the federal role in rural education.

Major Topic 2: Curricular Provisions in Rural Schools

- Provide adult literacy improvement in isolated rural communities.

Major Topic 3: School and Community Partnerships on Behalf of Rural Schools

- Identify effective school/community/private sector partnerships.
- Assess how federal-state-local policies are impacting rural schools and rural communities.
- Review legal procedures and issues pertaining to school and community partnerships on behalf of rural schools.
- Examine the factors of rural community economies that influence rural students' decisions to remain in school and graduate.
- Assess if Native American communities, or their learning environments, differ from other rural communities.
- Assess the role of the rural school in promoting employability.
- Identify effective alternative schooling programs in the rural communities.
- Identify the social and cultural issues of isolated rural communities that impact rural education.

Major Topic 4: Human Resources for Rural Schools

- Identify successful strategies for the recruitment of qualified personnel to rural schools.
- Identify successful strategies for the retention of qualified personnel in rural schools.
- Identify strategies that have been successful for releasing rural teachers from their classrooms for professional development.
- Identify successful leadership styles of effective rural school administrators.
- Identify the strategies used by administrators to comply with the state certification mandates.
- Assess the impact of recent state certification mandates on teacher availability in rural schools.

Major Topic 5: Use of Technology in Rural Schools

- Identify rural schools that have demonstrated effective use of advanced interactive instructional technology.
- Assess the impact of the advanced technology on rural school curriculum.
- Assess the effects of advanced technologies on traditional rural values of closeness, connection, or personnel relationships in learning interactions.
- Assess the implications for instructional staff and support personnel who are implementing advanced technology in rural school communities.
- Identify the staff development strategies that have been most successful in helping schools, teachers, and support personnel embrace and integrate advanced technologies into their overall rural school system.
- Identify rural schools that successfully have implemented distance education via telecommunications.

Major Topic 6: Financial Support for Governance for Rural Schools

- Analyze the policies of school finance in rural communities.
- Identify alternatives to school consolidation for rural school communities.
- Assess how federal and state fund distribution formulas have impacted rural schools in their operations and course offerings.
- Assess the impact on rural schools of state school reform policies on course quality, diversity of course offerings, and student outcomes.

ATTACHMENT #2

ROUND TWO DELPHI INSTRUMENT

Areas for Research and Development on Rural Education

In 1989, the Federal Interagency Committee on Education (FICE) Subcommittee on Rural Education examined the state of rural education research, drawing upon the knowledge of specialists within the federal government. From this examination, six topics emerged as priorities for furture research on rural education. These six priority topics, which are described in An Agenda for Research and Development on Rural Education, are: The Overall Effectiveness of Rural Schools; Curricular Provisions in Rural Schools; School and Community Partnerships on Behalf of Rural Schools; Human Resources for Rural Schools; Use of Technology in Rural Schools; and Financial Support and Governance for Rural Schools. For each topic, members of the Subcommittee generated sample research questions or areas of focus.

Below are the six priority topics and the research questions you provided write-in answers for in Round One. As a participant in Round Two of the Delphi study, please read carefully each area presented under the six major topics and circle the degree to which you agree that this area is a priority: SA (Strongly Agree), A (Agree), N (Neutral), D (Disagree), and SD (Strongly Disagree).

Following these six priority topics and new suggested research areas is a new major topic, Major Topic 7: Unique Aspects of Rural Communities. This topic was suggested in Round One as a major topic of research, not included in the Subcommittee's agenda, that should be examined. As a participant in Round Two of this Delphi study, please read carefully this major topic and its description and circle the degree to which you agree that this topic is a priority. If you circle SA, A, or N, please provide suggested areas of research, within this topic, that should be examined.

Major Topic 1: The Overall Effectiveness of Rural Schools

(Researchers should clearly define the factors that describe and affect the rural community being studied, such as geographic isolation; economy of scale; and variability in culture, economy, and social environment.)

Area A: Assess the degree to which rural schools are educating students for participation in a national economy vs. a local economy.

SA A N D SD

Area B: Assess the students who leave the rural community and either through advanced education or professional life become successful.

SA A N D SD

Area C: Assess SEA role in rural education.

SA A N D SD

Area D: Assess teacher education institutions role in rural education.

SA A N D SD

Area E: Assess student expectations—view of the future.

SA A N D SD

Area F: Assess the ways in which rural school culture breaks down class distinctions or promotes increased cultural understanding.

SA A N D SD

Area G: Contrast academic achievement of rural pupils taught in small classes against those in suburbs and urban schools with much larger class sizes.

SA A N D SD

Area H: Assess the role of rural schools in an "integrated services" approach to meeting community needs.

SA A N D SD

Area I: Understand the change process and extent to which change initiated in one part of school can encourage change throughout school culture.

SA A N D SD

Major Topic 2: Curricular Provisions in Rural Schools

(Serious curricular concerns have been raised over needs assessment, individualized instruction, design and implementation, cooperation with private sector development, and adult literacy improvement.)

Area A: Assess satisfaction of students, teachers, administrators, parents, and community leaders with current curriculum and instruction.

SA A N D SD

Area B: Develop assessment strategies that link outcomes of experimental learning to conventional curricular.

SA A N D SD

Area C: Assess how state and federal curriculum developed projects consider the needs of rural schools.

SA A N D SD

Area D: Identify strategies and programs from other countries that are transferable to American governance.

SA A N D SD

Major Topic 3: School and Community Partnerships on Behalf of Rural Schools

(Research on school and community relationships should describe the environment within which learning occurs.)

Area A: Assess level on parental and community involvement in rural area.

SA A N D SD

Major Topic 4: Human Resources for Rural Schools

(Research on rural school personnel should be focused on recruitment, retention, professional development, administration, and supervision.)

Area A: Identify effective beginnings teacher mentoring programs for rural schools.

SA A N D SD

Area B: Assess how business, industry, and community personnel can become teachers through alternative teacher education programs.

SA A N D SD

Major Topic 5: Use of Technology in Rural Schools

(The learning outcomes achieved from each new technological advance need to be studied--individually and comparatively.)

Area A: Assess importance of distance learning on rural students.

SA A N D SD

Area B: Conduct technology cost effectiveness.

SA A N D SD

Area C: Assess level of private support for use of technology in rural schools.

SA A N D SD

Area D: Identify innovative low cost alternative programs to those delivered via telecommunications.

SA A N D SD

Major Topic 6: Financial Support and Governance for Rural Schools

(Research should focus on the effects of school aid financial distribution formulas used by the states and by the federal government, the impact of school consolidation, and issues of education standards and quality.)

Area A: Look at ways to equalize salary levels for teacher/administrators in rural schools compared to benefits awarded teachers in large communities.

SA A N D SD

Area B: Explore legal and political implications for establishing local or regional foundations for seeking private funds and donations.

SA A N D SD

Area C: Compare and contrast the roles and strategies of rural interest groups in the several school finance court cases in the states.

SA A N D SD

Major Topic 7: Unique Aspects of Rural Communities

(More enthnographic studies at rural communities that cut across the topics above but focusing largely on the unique cultures, sociologies of particular rural settings in various geographic regions.)

SA A N D SD

If you circled SA, A, or N, what areas within this topic, Unique Aspects of Rural Communities, should be examined? (Please begin areas with a verb, as preceding examples.)

_____

_____

_____

_____

Appendix C:
Round Three
Instrument Documentation

AEL

Improving Education Through Research and Development

MEMORANDUM

TO: Rural Education SIG Members
FROM: John R. Sanders
DATE: November 4, 1992
SUBJECT: Round Three of Delphi Study

Thank you for participating in Round Two of the Delphi study for the Rural Education Special Interest Group (RE/SIG). Of the 29 RE/SIG members* selected to participate in the study, 28 returned usable instruments and the data were aggregated for Round Three.

Of the original 24 items on the Round Two Delphi instrument, 16 were retained for Round Three. Items were retained if 90 percent of the respondents Strongly Agreed, Agreed, or were Neutral with/toward the item.

The third round of the Delphi study contains the major topics and their suggested areas of research and development retained from Rounds One and Two (Attachment #1). Participants might recall that Round Two contained a seventh major topic (Unique Aspects of Rural Communities) and participants were asked to suggest areas of research and development necessary to implement this topic. Based on data from Round Two, this major topic did not meet the 90 percent criterion set for the Delphi study; therefore, this topic and the suggested areas of research and development were not retained for Round Three.

Round Three of the Delphi study consists of two parts: (A) prioritizing the six major topics and (B) developing a budget to address the six major topics.

This mailing pertains to Part A. Please review the six major topics and their research and development areas in Attachment #1. Rank the six major topics from 1 to 6, with 1 being the highest and 6 the lowest, to reflect the order of priority in which you believe the topics should be researched.

Once you have completed the Ranking Form (Attachment #2), mail it back to me at AEL by November 18, 1992.

JRS:ksc
Attachments

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*Originally, a purposeful sample of 30 RE/SIG members was selected for this study. One selected member did not return our calls and therefore did not participate in the study. A second selected RE/SIG member did not return a survey for Round Two.

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Attachment #1

ROUND THREE DELPHI INSTRUMENT

Areas for Research and Development on Rural Education

In 1989, the Federal Interagency Committee on Education (FICE) Subcommittee on Rural Education examined the state of rural education research, drawing upon the knowledge of specialists within the federal government. From this examination, six topics emerged as priorities for future research on rural education. These six priorities topics, which are described in An Agenda for Research and Development on Rural Education, are: The Overall Effectiveness of Rural Schools, Curricular Provisions in Rural Schools, School and Community Partnerships on Behalf of Rural Schools, Human Resources for Rural Schools, Use of Technology in Rural Schools, and Financial Support and Governance for Rural Schools. For each topic, members of the Subcommittee generated sample research questions or areas of focus.

Below are the six major topics and the research and development areas retained from Rounds One and Two of the Delphi study. These topics and areas were retained if 90 percent of the respondents Strongly Agreed, Agreed, or were Neutral with/toward the item.

Round Three of the Delphi study consists of two parts: (A) prioritizing the six major topics and (B) developing a budget to address the six major topics.

As a participant in Part A of Round Three, please read carefully the following list detailing the six major topics and their suggested research and development areas necessary to implement the topics. Then, rank the six major topics from 1 to 6, with 1 being the highest priority and 6 being the lowest priority, to reflect the relative urgency with which the major topics need to be addressed. Use the enclosed Ranking Form (Attachment #2) to indicate your priority ranking. Once you have completed this form, mail it back to AEL in the self-addressed, stamped envelope by November 18, 1992.

Major Topic 1: The Overall Effectiveness of Rural Schools

Area A: Improve access to educational opportunity in isolated rural communities.

Area B: Identify the problems unique to the delivery of education in isolated rural communities in the following special populations: handicapped, disadvantaged, and gifted.

Area C: Identify characteristics of effective rural schools.

Area D: Conduct evaluation studies of student achievement in rural schools.

Area E: Assess the federal role in rural education.

Area F: Assess the degree to which rural schools are educating students for participation in a national economy vs. a local economy.

Area G: Assess SEA role in rural education.

Area H: Assess teacher education institutions' role in rural education.

Area I: Assess student expectations--view of the future.

Area J: Assess the ways in which rural school culture breaks down class distinctions or promotes increased cultural understanding.

Area K: Assess the role of rural schools in an "integrated services" approach to meeting community needs.

Area L: Understand the change process and extent to which change initiated in one part of school can encourage change throughout school culture.

Major Topic 2: Curricular Provisions in Rural Schools

Area A: Provide adult literacy improvement in isolated rural communities.

Area B: Assess satisfaction of students, teachers, administrators, parents, and community leaders with current curriculum and instruction.

Area C: Assess how state and federal curriculum development projects consider the needs of rural schools.

Major Topic 3: School and Community Partnerships on Behalf of Rural Schools

Area A: Identify effective school/community/private sector partnerships.

Area B: Assess how federal/state/local policies are impacting rural schools and rural communities.

Area C: Review legal procedures and issues pertaining to school and community partnerships on behalf of rural schools.

Area D: Examine the factors of rural community economies that influence rural students' decisions to remain in school and graduate.

Area E: Assess if Native American communities, or their learning environments, differ from other rural communities.

Area F: Assess the role of the rural school in promoting employability.

Area G: Identify effective alternative schooling programs in the rural communities.

Area H: Identify the social and cultural issues of isolated rural communities that impact rural education.

Area I: Assess level of parental and community involvement in rural area.

Major Topic 4: Human Resources for Rural Schools

Area A: Identify successful strategies for the recruitment of qualified personnel to rural schools.

Area B: Identify successful strategies for the retention of qualified personnel in rural schools.

Area C: Identify strategies that have been successful for releasing rural teachers from their classrooms for professional development.

Area D: Identify successful leadership styles of effective rural school administrators.

Area E: Identify the strategies used by administrators to comply with the state certification mandates.

Area F: Assess the impact of recent state certification mandates on teacher availability in rural schools.

Area G: Identify effective beginning teacher mentoring programs for rural schools.

Major Topic 5: Use of Technology in Rural Schools

Area A: Identify rural schools that have demonstrated effective use of advanced interactive instructional technology.

Area B: Assess the impact of the advanced technology on rural school curriculums.

Area C: Assess the effect of advanced technologies on traditional rural values of closeness, connection, or personal relationships in learning interactions.

Area D: Assess the implications for instructional staff and support personnel who are implementing advanced technology in rural school communities.

Area E: Identify the staff development strategies that have been most successful in helping schools, teachers, and support personnel embrace and integrate advanced technologies into their overall rural school system.

Area F: Identify rural schools that successfully have implemented distance education via telecommunications.

Area G: Conduct technology cost effectiveness studies.

Area H: Assess level of private support for use of technology in rural schools.

Area I: Identify innovative, low-cost alternative programs to those delivered via telecommunications.

Major Topic 6: Financial Support for Governance for Rural Schools

Area A: Analyze the policies of school finance in rural communities.

Area B: Identify alternatives to school consolidation for rural school communities.

Area C: Assess how federal and state fund distribution formulas have impacted rural schools in their operations and course offerings.

Area D: Look at ways to equalize salary levels for teacher/administrators in rural schools compared to benefits awarded teachers in large communities.

Area E: Compare and contrast the roles and strategies of rural interest groups in the several school finance court cases in the states.

Attachment #2

NREA/AEL DELPHI STUDY

Part A: Ranking Form, November 1992

As a participant in Part A of Round Three, please read carefully Attachment #1: Round Three Delphi Instrument. This details the six major topics and their suggested research and development areas for the NREA/AEL Delphi study. Rank the six major topics from 1 to 6, with 1 being the highest priority and 6 being the lowest priority, to reflect the relative urgency with which the major topics need to be addressed. Write the number (1 through 6) on the space before each topic name. Use each number once.

_____ Major Topic 1: The Overall Effectiveness of Rural Schools

_____ Major Topic 2: Curricular Provisions in Rural Schools

_____ Major Topic 3: School and Community Partnerships on Behalf of Rural Schools

_____ Major Topic 4: Human Resources for Rural Schools

_____ Major Topic 5: Use of Technology in Rural Schools

_____ Major Topic 6: Financial Support for Governance for Rural Schools

Once you have completed this form, mail it back to John Sanders in the self-addressed, stamped envelope by November 18, 1992.

AEL

Improving Education Through Research and Development

MEMORANDUM

TO: Rural Education SIG Members
FROM: Jack John R. Sanders
DATE: November 25, 1992
SUBJECT: Round Three of Delphi Study

Thank you for participating in Part A of Round Three of the Delphi study for the Rural Education SIG (RE/SIG) group. This mailing pertains to Part B: Developing a budget to address the six major topics. Assume that you are a director of a newly-formed national R & D center for rural educational research. In this role, you have a $5,000,000 budget to allocate for rural educational research for FY 93. This amount of funding for a federally-funded, national R & D center has been suggested recently by a prominent policymaker.

Please review the six major topics and their suggested research and development areas in Enclosure #1. Next, locate the enclosed sheet of 10 blue stick-on dots. Think of each dot as 10 percent--$500,000--of your budget. Tell us how this budget should be allocated among the six major topics. Complete the enclosed NREA/AEL Delphi Study Response Card and mail it back to me at AEL in the self-addressed, stamped envelope by December 9, 1992.

JRS:ksc

Enclosures

P.S. I'm still missing a few Part A Ranking Forms. For those of you who haven't returned your form yet, please do so by December 9. Thanks!

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Telephone 304/347-0400 • Toll free 800/624-9120 • FAX 304/347-0487

Enclosure #1

ROUND THREE DELPHI INSTRUMENT

Areas for Research and Development on Rural Education

In 1989, the Federal Interagency Committee on Education (FICE) Subcommittee on Rural Education examined the state of rural education research, drawing upon the knowledge of specialists within the federal government. From this examination, six topics emerged as priorities for future research on rural education. These six priorities topics, which are described in An Agenda for Research and Development on Rural Education, are: The Overall Effectiveness of Rural Schools, Curricular Provisions in Rural Schools, School and Community Partnerships on Behalf of Rural Schools, Human Resources for Rural Schools, Use of Technology in Rural Schools, and Financial Support and Governance for Rural Schools. For each topic, members of the Subcommittee generated sample research questions or areas of focus.

Below are the six major topics and the research and development areas retained from Rounds One and Two of the Delphi study. These topics and areas were retained if 90 percent of the respondents Strongly Agreed, Agreed, or were Neutral with/toward the item.

Round Three of the Delphi study consists of two parts: (A) prioritizing the six major topics and (B) developing a budget to address the six major topics.

As a participant in Part B of Round Three, we want you to assume the role of a director of a newly-formed national R & D center for rural educational research. In this role, you have a $5,000,000 budget to allocate for rural educational research for FY 93.

Please read carefully the following list detailing the six major topics and their suggested research and development areas. Next, locate the enclosed sheet of 10 blue stick-on dots. Think of each dot as 10 percent—$500,000—of your budget.

We want you to tell us how this budget should be divided across these six topics. Indicate to us how much of your budget you are willing to allocate for research and development on each topic. Do this by placing as many dots as you would like in the area marked "Place dots here" for each major topic. You may use all 10 dots for one topic, or any combination of the 10 dots for all six topics. Not all dots need to be spent, nor all topics awarded research and development dollars. If you feel your budget would be best spent in "other" research areas, we have provided you with an opportunity to spend your money in an "other" category.

As indicated above, each dot represents $500,000 of research and development dollars. This amount cannot be broken into smaller units. In other words, only whole dots will be counted toward the results for this round of the Delphi instrument. Also, please place the dots within the circles so we can determine how many dots are there. In other words, don't stack all 10 dots on top of one another.

Once you have placed your dots in the appropriate box on the response card, indicate, by number, how many dots you awarded to this topic. This number goes in the area marked "Total $ Awarded." This is just a precaution in case some of your dots come off in the mail. Finally, provide us with any qualifying comments you feel might be necessary to assist us in understanding your allocation decisions.

After you have finished dividing up your research and development budget, place your completed response card in the enclosed self-addressed, stamped envelope and mail it to me at AEL by December 9, 1992.

Major Topic 1: The Overall Effectiveness of Rural Schools

Area A: Improve access to educational opportunity in isolated rural communities.

Area B: Identify the problems unique to the delivery of education in isolated rural communities in the following special populations: handicapped, disadvantaged, and gifted.

Area C: Identify characteristics of effective rural schools.

Area D: Conduct evaluation studies of student achievement in rural schools.

Area E: Assess the federal role in rural education.

Area F: Assess the degree to which rural schools are educating students for participation in a national economy vs. a local economy.

Area G: Assess SEA role in rural education.

Area H: Assess teacher education institutions' role in rural education.

Area I: Assess student expectations—view of the future.

Area J: Assess the ways in which rural school culture breaks down class distinctions or promotes increased cultural understanding.

Area K: Assess the role of rural schools in an "integrated services" approach to meeting community needs.

Area L: Understand the change process and extent to which change initiated in one part of school can encourage change throughout school culture.

Major Topic 2: Curricular Provisions in Rural Schools

Area A: Provide adult literacy improvement in isolated rural communities.

Area B: Assess satisfaction of students, teachers, administrators, parents, and community leaders with current curriculum and instruction.

Area C: Assess how state and federal curriculum development projects consider the needs of rural schools.

Major Topic 3: School and Community Partnerships on Behalf of Rural Schools

Area A: Identify effective school/community/private sector partnerships.

Area B: Assess how federal/state/local policies are impacting rural schools and rural communities.

Area C: Review legal procedures and issues pertaining to school and community partnerships on behalf of rural schools.

Area D: Examine the factors of rural community economies that influence rural students' decisions to remain in school and graduate.

Area E: Assess if Native American communities, or their learning environments, differ from other rural communities.

Area F: Assess the role of the rural school in promoting employability.

Area G: Identify effective alternative schooling programs in the rural communities.

Area H: Identify the social and cultural issues of isolated rural communities that impact rural education.

Area I: Assess level of parental and community involvement in rural area.

Major Topic 4: Human Resources for Rural Schools

Area A: Identify successful strategies for the recruitment of qualified personnel to rural schools.

Area B: Identify successful strategies for the retention of qualified personnel in rural schools.

Area C: Identify strategies that have been successful for releasing rural teachers from their classrooms for professional development.

Area D: Identify successful leadership styles of effective rural school administrators.

Area E: Identify the strategies used by administrators to comply with the state certification mandates.

Area F: Assess the impact of recent state certification mandates on teacher availability in rural schools.

Area G: Identify effective beginning teacher mentoring programs for rural schools.

Major Topic 5: Use of Technology in Rural Schools

Area A: Identify rural schools that have demonstrated effective use of advanced interactive instructional technology.

Area B: Assess the impact of the advanced technology on rural school curriculums.

Area C: Assess the effect of advanced technologies on traditional rural values of closeness, connection, or personal relationships in learning interactions.

Area D: Assess the implications for instructional staff and support personnel who are implementing advanced technology in rural school communities.

Area E: Identify the staff development strategies that have been most successful in helping schools, teachers, and support personnel embrace and integrate advanced technologies into their overall rural school system.

Area F: Identify rural schools that successfully have implemented distance education via telecommunications.

Area G: Conduct technology cost effectiveness studies.

Area H: Assess level of private support for use of technology in rural schools.

Area I: Identify innovative, low-cost alternative programs to those delivered via telecommunications.

Major Topic 6: Financial Support for Governance for Rural Schools

Area A: Analyze the policies of school finance in rural communities.

Area B: Identify alternatives to school consolidation for rural school communities.

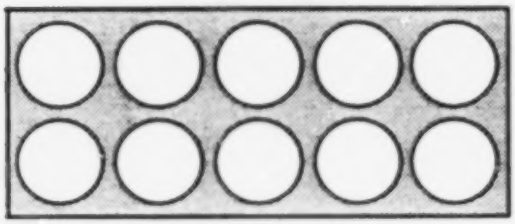
Area C: Assess how federal and state fund distribution formulas have impacted rural schools in their operations and course offerings.

Area D: Look at ways to equalize salary levels for teacher/administrators in rural schools compared to salary levels for those in large communities.

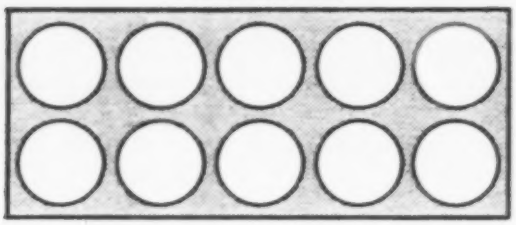
Area E: Compare and contrast the roles and strategies of rural interest groups in the several school finance court cases in the states.

NREA/AEL Delphi Study
Response Card
November 1992

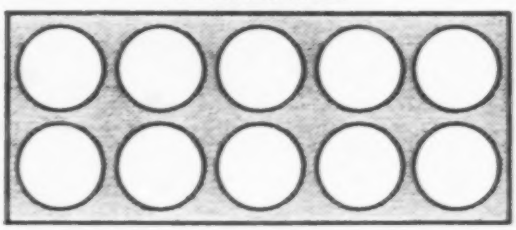
Major Topic 1: The Overall Effectiveness of Rural Schools

Place dots here	Total $ Awarded	Qualifying Comments
	____ dots X $500,000 = $_____	

Major Topic 2: Curricular Provisions in Rural Schools

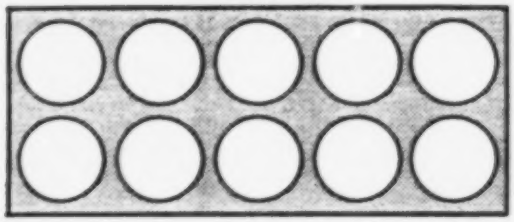
Place dots here	Total $ Awarded	Qualifying Comments
	____ dots X $500,000 = $_____	

Major Topic 3: School and Community Partnerships on Behalf of Rural Schools

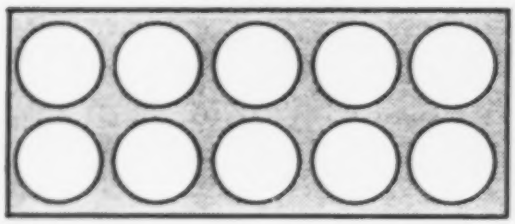
Place dots here	Total $ Awarded	Qualifying Comments
	____ dots X $500,000 = $_____	

☞ please turn over ☜

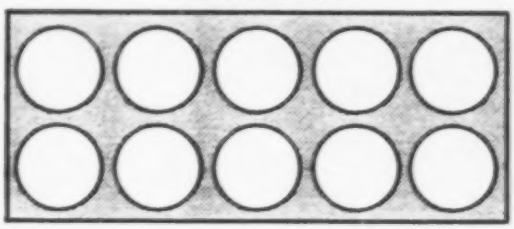
Major Topic 4: Human Resources for Rural Schools

Place dots here	Total $ Awarded	Qualifying Comments
	____ dots X $500,000 = $_____	

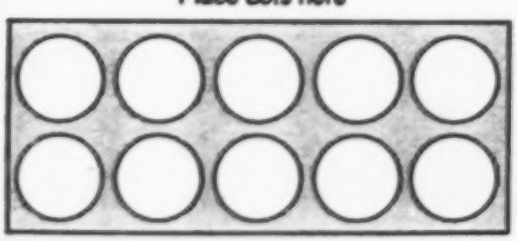
Major Topic 5: Use of Technology in Rural Schools

Place dots here	Total $ Awarded	Qualifying Comments
	____ dots X $500,000 = $_____	

Major Topic 6: Financial Support and Governance for Rural Schools

Place dots here	Total $ Awarded	Qualifying Comments
	____ dots X $500,000 = $_____	

Other _____

Place dots here	Total $ Awarded	Qualifying Comments
	____ dots X $500,000 = $_____	

Appendix D:
Commentaries

COMMENTARY

I think of the study as attempting to accomplish two objectives: (1) compile a common core of priority R & D areas for the nation's rural, small schools and (2) establish some priorities among those R & D areas. The study accomplished the first objective and did not provide conclusive evidence for the second objective.

For the first objective, the study took the 19 R & D priority areas (organized around the same six topics) from the original 1991 agenda and succeeded in compiling an extended and consensus set of 47 R & D areas, using the three-step Delphi methodology. I think that's a real contribution. The process adds validity to the work of the committee that developed the original six topics and the priority areas under each. On the other hand, the study did not shed any light on the relative importance of these topics or areas in terms of either rank order of topics (Part A) or funds to be allocated to them (Part B). Perhaps participants cannot make the discriminations; maybe the R & D areas under the topics are so inter-related that grouping them into topics for rank ordering produces more noise than light. Maybe this is a lesser task anyway. All the six topics are important and, according to the participants of the study, worthy of support.

The study has validated the national R & D agenda for rural education. The issue of priority-setting, that is, which topic or area is more important or requires more immediate attention, is as much a regional and state concern as a national or federal one because building a national R & D agenda for rural schools is necessarily developmental, requiring interactions and accommodations between local and state needs and national interests. The challenge is here; the next step may be for the states to formulate their responses to it.

How should the findings be disseminated? What impact will the expanded agenda have on rural R & D? I think the revised list of R & D areas, as well as a brief description of the Delphi process, might be the subject of an ERIC Digest that can be distributed nationally through the Clearinghouse. This expanded R & D agenda will be helpful to state and regional deliberations on future R & D plans for rural and small schools.

Stanley Chow, Far West Laboratory, San Francisco, CA

COMMENTARY

There are many Americans who champion the quality of life provided in a rural setting. The interrelatedness of the land and the community; the effects of the seasons and the local economy on the relationships between the people; and the absence of urban noise, clutter, and pollution all speak to a culture that values familiarity, personal connections, and privacy. The school is an important part of day-to-day activity in rural communities. Along with the library and the fire department, the schoolhouse serves to bring people together for the betterment of the town. In doing so, the school exerts considerable influence on the development of the community. Whether graduates of rural schools choose to live in their home towns, or move to new places in the country or the world, the skills and knowledge that they accumulate from schooling during their childhood and adolescence have a tremendous effect on how each of them will spend their time as adults.

It seems to me the results of the study presented in AEL Occasional Paper 25 dance around what needs to be said clearly. How do students who have been educated in rural schools measure their success after they graduate from high school? Are they satisfied with their lives? Do they contribute to the community? Can they provide for themselves and their families financially? Are they lifelong learners? Do they seek answers to problems that may not be specific to only rural areas, but problems that snag the fabric of the country as a whole? I suspect that all educators could agree that these questions are at the heart of the matter.

The most surprising finding from the study is the lack of emphasis on curricular provisions. Determining what content is taught, how that content is presented to students, and how well students meet the expectations established at the school site are the major responsibilities of teachers and administrators in rural schools. The usefulness of curricular blueprints and varied instructional approaches in creating meaningful learning environments for students needs to be continually examined. If we are to facilitate the development of an informed citizenry with skills to cope with the changes that will surely accompany the arrival of the 21st century, this task should be at the forefront of our coordinated efforts.

Creating opportunities for rural educators to critically assess what is actually taking place within the walls of the schoolhouse with regard to curriculum, instruction, and student learning is not an empty exercise. Some questions that might be explored follow. Do our teachers and students know how to learn? Do they have access to adequate resources? Do parents understand what the school is doing? Does the curriculum match the needs of the community? How can instructional time be best organized? Is technology a successful instructional strategy? What about cross-age groupings? Internships with local businesses? Are learning experiences designed to promote the use of advanced thinking skills?

Typically, the time necessary to thoughtfully answer these kinds of questions is not allocated regularly. By delving into the areas of curriculum and instruction, many issues surface that require teachers, parents, and community members to question what they believe to be important about educating students so that they can successfully contribute to the future of the community. Conducting focus groups, surveys, long-term staff development, case studies, and assessing student progress through the use of multiple measures can lead to meeting outcomes in the process of developing rural schools and communities.

Placing the curriculum at the center of the rural research and development agenda could enhance a more systemic approach to the overall improvement of rural education. All six of the recommended topics are linked, although the webbing may be complex, to the productivity and success of the student. Keeping curriculum as the focal point of our thinking may assist us with the formidable task of consolidating the range of topics presented by FICE and the Rural Education Special Interest Group. In doing so, some of the generalities present in the conclusions of AEL Occasional Paper 35 may be delineated further, preventing the loss of valuable time, energy, and resources that could be better used in advancing the rural education research and development menu.

Gail Gordon, RMC Research Corporation, Baltimore, MD

COMMENTARY

This study is a significant and useful effort for pushing forward the research and development related to rural schools. Following the FICE's initial work, the project tried to clarify important issues facing rural schools. One of the project's distinctive features is that information was collected based on carefully weighed judgments of researchers who are active in the field. The other important feature of this study is that the project was conducted by AEL, which, located in the hinterland of the rural Appalachia region, has been long focusing its attention on rural education.

Important Findings

The most salient finding of the study is the panel members' high emphasis on the effectiveness of rural schools. Indeed, the quality of educational institutions is the key concern for both rural communities and the nation as a whole (see Special Study Panel on Education Indicators, 1991). School effectiveness is the main theme of this study, and all the other major topics (curriculum, school-community partnerships, staffing, technology, and financing) actually are subdimensions of, or instruments to realize, school effectiveness. My concern is not so much about the priority rankings of the topics, but the balance of the issue coverage and the logical and practical connections across the research/development tasks. With such a concern, it makes sense to me that the panel had a strong consensus on the need for research on the overall issue of school effectiveness, but expressed more diverse judgments on the other main topics.

The results from Round Two of the study seem most important. The topics identified here are either practically pressing or scholarly interesting or both: integrated services; SEA role in rural education (I would add the roles of rural districts and school buildings in policymaking); higher education role; students' expectation, particularly their views of the future; the extent to which rural schooling works to enable rural students to fit into local or national economies; and rural school environment's role in altering class differentiation. Using NCES data, I've conceptualized an analysis on the changing policymaking roles of school districts in rural areas. In the current restructuring process, the federal and state influences are drastically increasing (with a host of powerful mechanisms such as resources allocation and incentive development, mandates and regulations, and guidance and standardization); while local school-based management also claims large chunks of decisionmaking power (Elmore, 1993). In the middle of such a simultaneous centralization and decentralization, what is the school district role in policymaking? Great discrepancy can be expected of rural districts' responses to the changes, in contrast to the large urban districts that function as de facto SEAs.

The proposed research on rural students' expectations of the future and students' participation in local versus national labor markets is closely tied together. Both imply a fundamental paradox facing rural communities and schools. That is, with rural communities' meager resources and desperate needs for the educated, rural schools are training rural youth with urban-oriented skills so that they can leave their native communities for the urban labor market (DeYoung, 1991). To deal with this issue in research, both large structural factors and local process factors should be considered. For instance, the local economy's position in the national/global economy and school programs/curriculum can affect students' expectation for outmigration or remaining. Liberal arts proponents say that humanities education that incorporates the local culture can help strengthen rural youths' attachment to the community. Vocational/technical educators see occupational skills as essential for rural kids to get jobs and to ultimately revitalize rural economies. Empirical examinations to both claims are badly needed.

The other interesting idea suggested by the panel is the rural culture's function in reducing class distinction. If I understand correctly, rural culture sanctions close interpersonal relations that are crucial for teaching and learning. Intimate interaction among teachers, students, and family fosters a school climate that reduces the detrimental effect of poverty. Particularly, such a climate may reduce the differentiation in student outcomes related to SES.

Major Topic 2 (curriculum) enlists issues on the impact of program/curriculum on psychosocial outcomes of rural schooling. How do state-guided or state-standardized curricula meet the needs of the local people, and contribute to community development? What are and should be the input of local folks to the curriculum/instruction so that learning can strengthen the local social integration and cultivate youngsters' sense of meaning in rural life? The issue, linking to the debate on liberal arts versus occupational education, is of high-stake for both policymaking and pedagogy.

Major Topic 3 refers to a critical matter in rural education: parental and community involvement in school. What are the ways by which rural families participate in kids' schooling? How do parents help kids learn? What are the activities parents are involved with in school? What are the consequences of such help and participation to student outcomes? And how can we improve parental and community participation? Systematic efforts are needed to address these questions.

In terms of Major Topic 6, financial support, baseline data are needed to provide national, state, and local pictures about financial equity. We need comparisons across locales and administrative levels. Such comparisons should be done in an ongoing process, perhaps every three or five years on the national level, and every year on the state or local level. Fair and effective decisions can be made based on valid and precise comparative analyses.

An Additional Research Issue

Early childhood services and education are recognized as a critical approach to handling the problems related to high-risk students. The notion of "ready to learn" is a powerful statement of a national education goal. These issues were ignored in this study. The matter seems especially relevant to rural schooling because early childhood services seem to be in acute shortage in rural areas. Research tasks may include: (1) collecting and interpreting baseline data on maternal health, nutrition, prenatal health, infant health, and preschool health and development; (2) exploring rural family environment effects on early childhood development; (3) studying nonparental child care services distribution and utilization in rural areas; (4) identifying effective parent education strategies for improving early childhood parenting skills; (5) assessing Headstart and other programs in rural settings; and (6) examining the impact of early childhood programs to later schooling.

Gary Huang, National Center for Education Statistics, Washington, DC

COMMENTARY

Priorities for Research and Development on Rural, Small Schools, a study conducted by the Appalachia Educational Laboratory with selected members of the Rural Education SIG of AERA, provides a rich menu of researchable issues on rural education.

In my present research study on defining the characteristics of effective elementary schools in West Virginia, I had not included the subdivision of characteristics of effective rural schools or the subdivision of student achievement in rural areas. The list of research topics provided by the AEL Delphi study became a strong reminder of important rural issues that needed to be investigated and that could be included in my present work. All I needed was the reminder and a rural code to identify rural schools in my data set to include the two important rural education areas in my present research study.

To me, the most interesting finding of this study was that a group of 28 rural researchers across the United States took the time to complete the surveys and provide the public with such a rich array of topics to explore. Because of the selection process provided by the Delphi study, I feel confident that the topics are worthy of investigation.

The most important finding is the potential utility of the research and development menu for researchers, graduate students, and policymakers. The menu could be used as a source of research topics for graduate students, as a reminder of important rural areas to include in present or future research studies for researchers, and as a gauge for measuring the importance of rural issues by policymakers. I feel that it will be beneficial to my work to review the list of topics each time I start a new research project for possible inclusion of items and as a refresher of potential areas of research. For greatest utility, I suggest that the agenda be published in a form that can be attached to a bulletin board or retrieved with little or no effort.

For the research and development menu to have the maximum impact on rural, small schools, the menu should be sent to the members of AERA, the National Rural Education Association, and to graduate schools across the United States as suggested topics for potential research and graduate studies.

For additional benefit to the rural areas, one topic could be examined by each state and the results compiled to form a national overview. For example, under Major Topic 1: The Overall Effectiveness of Rural Schools, a specific area such as the federal role in rural education could be explored across the United States. I would think that this type of information would be of great interest to state and federal policymakers.

If researchers across the United States start including an item from the research and development menu in their research project, or select an item as a major topic, then we may see an increased awareness of rural education issues across the nation. The research and development menu will plant the seed in the researcher's mind and will encourage research in an area that may have been overlooked.

I commend AEL and the group of 28 rural researchers for their efforts in providing such a rich array of rural research topics to the research community. I feel your efforts will have an important impact on future research on rural education.

Mary Hughes, West Virginia Education Fund, Charleston, WV

COMMENTARY

What can we learn from the Delphi study of priorities for research and development in rural education? One thing we learn is that the Federal Interagency Committee on Education (FICE) subcommittee on rural education's 1989 research agenda still holds up in 1993. The Delphi study leaves intact all six original major topics. No others met the criteria for inclusion. This makes a good case for considering these the important areas for research and development in rural education.

A closer look at the specific items under several of the major topical areas strengthens the case for the FICE agenda. For example, two topical areas emerged virtually unchanged. These were school and community partnerships (Major Topic 3) and human resources for rural schools (Major Topic 4). The partnership topic pulled in fully 89 percent of the specific items from the original FICE list and the human resources topic retained a healthy 86 percent. By the end of Round Two, the Delphi study respondents had added only one new item to each of these topical areas. Two other major topical areas retained more than half of the original items. These have to do with the use of technology in rural schools (Major Topic 5) and the overall effectiveness of rural schools (Major Topic 1).

Further examination of the details, however, suggests that the Delphi respondents changed the FICE agenda to a greater extent than may be obvious at first. The amount of change is relatively clear in the areas of curricular provisions (Major Topic 2) and financial support for governance (Major Topic 6). In these topical areas, the respondents retained the fewest items from the 1989 FICE list and added a relatively high proportion of new items. (Only one or 20 percent of the curricular topic's original five items made the final list; the two additions from Delphi respondents made up 67 percent of the final set.)

Substantial recasting of the FICE agenda by the Delphi respondents can also be seen in the area of overall effectiveness of rural schools (Major Topic 1). Although over 60 percent of the FICE items under this heading made the Delphi study's final list, they were outnumbered by new additions from the Delphi respondents. The respondents tended to drop items relating to programs in rural schools and tended to add items about the connection of rural schools to other institutions (e.g., the state, the community, the economy) and the nature of culture in rural schools.

Other analyses would reveal more about the nature of the subtle shift in priority or in the meaning of the priorities from 1989 to 1993. One such analysis might be to compare the substance of the items retained and those dropped from the FICE items. Another might be comparing the topics and items that the Delphi respondents proposed and subsequently retained or dropped.

Still more might be gained by a discussion among the Delphi respondents. A face-to-face discussion would not only allow them to explain the mismatch between their ratings of priority and assignment of resources, but could also give them an opportunity to attempt to reach consensus on the intellectual and material priority of the topics within the research and policy community. The Delphi study gives us an idea of the amount of convergence of their ideas; having them argue out their views might produce a powerful consensus about these (or maybe even other) ideas.

How does the Delphi study hold up against the views of rural education practitioners? A study of rural superintendents' perceptions of critical issues in rural education, which was conducted in Maryland about the same time, provides a comparison. Informants in the Maryland study included the members of the Rural Assistance Council (RAC), which is composed of superintendents from Maryland's seven low-wealth school systems and the director and codirector of a nine-system rural consortium. The school systems in the RAC are located in the extreme western part of the state, an Appalachian region; and in

the south central part of the state and on the eastern shore of the Chesapeake, both regions of farming and water products. County-based, these school systems enroll from 5,000 K-12 students in the smallest to 15,000 in the largest.

The RAC study was conducted by Research for Better Schools and involved individual telephone interviews of RAC members (N = 9). Responses are presented in decreasing order of frequency.

- Most RAC members (78 percent) identified funding and equity as a critical issue. In the Delphi study, the equivalent topic (Major Topic 6) ranked third, but was judged to have relatively modest salience.

- Most (78 percent) also identified low-cost implementation as a top priority. Implementing promising practices within severe fiscal constraints was the issue, not access to ideas nor knowledge about promising practices. This also links most closely to the financial support topic (Major Topic 6). However, it is obliquely connected to items that refer to effective programs, especially if the judgment of their effectiveness includes a cost and/or resource criterion. Examples might be improving access to educational opportunity in Major Topic 1, assessing how state and federal curriculum development projects consider rural needs in Major Topic 2, identifying effective alternative schooling programs under Major Topic 3, and so on.

- Just over half (56 percent) of RAC members cited family and community involvement in education as a critical issue. They were interested both in how to involve parents in school improvement and in how to generate support for education in their communities. Another aspect of this issue was how to promote school-business partnerships in the face of high unemployment and few local industries. This set of issues relates clearly to the Delphi study's Major Topic 3 on school and community partnerships.

- Slightly under half (44 percent) of RAC members identified school improvement and reform as the next most pressing issues in rural education. Of particular interest was how to help staff and community welcome and institutionalize change. Understanding change was a small part of the Delphi study's overall effectiveness of rural schools (Major Topic 1).

- One-third (33 percent) of RAC members indicated that staff development was a critical issue. Like low-cost implementation, this issue had implications in other topical areas. Specific aspects of this issue had to do with high-impact content and methods to renew a veteran teaching force, and developing staff adequately for the continuous stream of state mandates. This issue is part of Major Topic 4, human resources for rural schools, in the Delphi study.

- Integrated services also concerned one-third (33 percent) of RAC members. This correlates to a portion of the Delphi study's Major Topic 1, overall effectiveness of rural schools.

Overall, the RAC members shared some of the Delphi respondents' issues, but the two agendas differ in emphasis. The RAC members want to know how to do what they have to do. They are executives and theirs is an agenda for action. Specifically, they want to know how to make do with few resources.

The similarities among the FICE, Delphi, and the RAC lists suggest fundamental agreement about research and development priorities in rural education. The differences suggest the need for dialogue–among the Delphi researchers and policymakers, as well as between them and practitioners. And if a national research and development center for rural education were to be established, it might be wise to add that dialogue to its list of priorities.

Gail Meister, Research for Better Schools, Philadelphia, PA

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